Skin Tone and Racial Inequality in the US: Evidence from the 20th Century*

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Abstract

Empirical work on racial inequality typically relies on a binary Black–white comparison, treating racial categories as uniform and masking meaningful variation in how individuals are treated. Using WWII draft registration records containing information on skin tone for the universe of men born between 1898–1928, we document large intra-racial disparities by skin color: in 1940 lighter-skinned Black men earn about 40% more than Black men with dark-skin. We find that differences in wage relevant characteristics can explain a large portion of these gaps but a significant portion (around 16%) remains unexplained. We explore several potential mechanisms behind these disparities. Differences in family resources and childhood environment explain all of the education gap, but 20% of the earnings gap remains even among children with different skin tones from the same family. We then consider the importance of discriminatory institutions. While Jim Crow exposure depresses outcomes for Black men overall, we find no differential impacts by skin tone. Finally, movers evidence suggests that location is an important determinant of these skin color hierarchies. Black men with dark skin that move to labor markets with larger local earnings gaps experience larger penalties themselves. Our results show that skin tone inequality reflects both inherited disadvantage and distinct discriminatory forces that sort Black men along color lines and are not necessarily the same as those driving broader racial inequality.

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1. Introduction

While economists frequently study racial inequality, empirical analyses often rely on a binary treatment of race. This treats members of a racial category as a fixed uniform group, assuming that all individuals labeled the same are affected similarly. Recent work in economics, in agreement with longstanding sociological and historical research, has challenged this traditional approach by treating race as a constructed social category that can depend on a variety of characteristics like socioeconomic status (Rose, 2023; Adukia et al., 2025). Furthermore, a growing empirical literature documents significant differences in opportunities and trajectories for Black people with different skin tones that can sometimes exceed between race gaps (see Monk (2021) for a review). This research posits that the economic forces driving this type of intra-racial inequality may differ distinctively from those driving between race gaps.[1] Without understanding both sets of forces separately, we risk missing changes in the structure and consequences of racial inequality.

Understanding the sources of intra-racial inequality can also provide new insights about the mechanisms shaping racial inequality broadly. By comparing individuals in the same race group, we can isolate margins that are typically conflated in Black-white comparisons. For example, standard race gaps often capture the combined influence of shared institutional history (e.g. slavery, segregation) and active discrimination, making it difficult to understand the importance of these distinct economic forces. Distinguishing the two has important policy implications; if differential treatment is prevalent, then policies that target resource gaps may only provide short-term benefits.[2]

This paper uses newly compiled administrative data from WWII draft registration records, linked to the 1940 decennial Census, to study differences in the labor market trajectories of Black men with different skin tones.[3] Our work relates to a large literature documenting

[1] For example, institutional regimes like Jim Crow explicitly targeted Black people overall and may not have operated at the level of skin color.

[2] Conversely, if differences in resource gaps are prevalent (i.e. wealth gaps (Derenoncourt et al., 2024)) then policies that target active discrimination may be inadequate or lead to slow racial convergence.

[3] This data has several advantages compared to prior work. First, it provides direct detailed measures of skin color and does not rely on racial proxies of complexion (e.g. 'Mulatto'). While racial proxies will be highly correlated with skin color and other phenotypic racial characteristics, they will also be influenced by social determinants of race (Adukia et al., 2025). This means that comparisons using prior data might underestimate the extent of the differences in outcomes between individuals with different skin colors. Given

skin tone disparities in income (Goldsmith, Hamilton and Darity, 2006, 2007), education (Branigan et al., 2013; Monk, 2014), health (Diette et al., 2015; Monk, 2015), and incarceration (Blair, Judd and Chapleau, 2004; Viglione, Hannon and DeFina, 2011). A related strand of the literature examines the historical origins of these disparities (Bodenhorn, 2002, 2006; Bodenhorn and Ruebeck, 2007), tracing out their origins within slavery (Reece, 2018) and documenting substantial differences in literacy, wealth, and occupational status between these groups (Bodenhorn, 2002, 2006; Bodenhorn and Ruebeck, 2007; Gullickson, 2010; Abramitzky et al., 2023). Despite growing historical and contemporary evidence on the prevalence and magnitude of these intra-racial differences, we know relatively little about the forces that sustain these gaps. We contribute to this literature by documenting skin tone gaps in 1940 and providing new evidence on their underlying mechanisms.

When examining inequality between groups, the labor literature often turns to inequality in earnings since inequality in the labor market can have lasting impacts on a person's life. One benefit of the 1940 census is that we observe earnings for a large portion of the population. Therefore, we begin our analysis by estimating the magnitude of the earnings penalty associated with darker skin in 1940. Using enumerator-assigned skin tone categories from the draft registration records, we estimate that lighter-skinned Black men earn around 40% (34 log points) more than their darker-skinned peers. This unconditional gap is economically large, equivalent to roughly half of the Black-white earnings gap during this period. Stated another way, if all Black men had the same average earnings as Black men with dark-skin, the Black-white earnings gap in 1940 would be 60% larger.[4]

These observed earnings gaps may be driven by differences in upstream wage determinants as well as differential treatment in the labor market. We first examine differences in two important upstream outcomes: educational and occupational attainment. We find that Black men with light-skin have 25% more years of schooling and are almost twice as likely to work in skilled occupations. To understand the relative importance of these channels, we

that complexion in our data was often recorded for identification, we believe it is less sensitive to these forces. See Appendix C for more information of the validity of our skin tone variables and historical census classification.

[4]If instead, all Black men had the same average earnings as Black men with light-skin, the Black-white earnings gap would be 25% smaller.

explore how controlling for common wage determinants changes the estimated gap.[5] Differences in education and occupation account for roughly 55% of the unconditional earnings gap. Even when controlling for a full set of pre-wage determinants including education, occupation, and location, 16% of the original gap remains unexplained. This suggests that a significant portion of the light-dark earnings gap may be driven by differential treatment in the labor market.

A question that remains after documenting these gaps in economic outcomes is what mechanisms contribute to these observed differences? We consider three broad types of mechanisms: intergenerational factors (parental endowments, shared history), location choice (migration), and location-specific factors (childhood environment and adult labor markets). We separately examine the influence of these factors on pre-labor market outcomes determined in childhood, such as education, and labor market outcomes in adulthood, such as occupation and earnings. We ask, what is the relative importance of these mechanisms in explaining the skin tone gaps? Do they primarily operate through pre-labor market outcomes, labor market outcomes, or both?

One common explanation for skin tone gaps is that they reflect the intergenerational transmission of disadvantage. Skin tone differences in the United States have well documented historical origins in slavery (Reece, 2018). Since skin tone is heritable, observed disparities today could reflect unequal resources, opportunities, and social positioning passed down within families. To assess this, we examine how controlling for family background affects our outcomes of interest. It is important to note that when looking within family, we control for both family resources and childhood environment both of which are influenced by historical legacies.

Family fixed effects fully account for differences in educational attainment between siblings with different skin tones. This suggest that parents do not differentially invest in children based on skin color, and that the education gradient is largely driven by between-family factors. However, even among these children with similar education and upbringing, lighter skinned individuals earn 7.7% more leaving roughly 20% of the baseline wage gap

[5] Since we show that many of these control variables are themselves influenced by skin tone they may be considered "bad" controls.

unexplained by family background. This pattern suggests a potential role for color-based discrimination. Together, these findings indicate that while family background explains the human capital component of skin tone inequality, substantial earning differences remain even within families indicating that skin tone earnings inequality is not just a consequence of inherited disadvantage. While these results show that shared family and environmental factors largely explain the education gradient, they do not distinguish between resources and environment nor do they tell us which features of the childhood environment matter most.

A natural next question is what specific components of the childhood environment are driving these between-family differences. One prominent candidate, especially for Black families in the early 20th-century South, is exposure to racist institutions such as Jim Crow. Legal regimes that impacted childhood environment by restricting schooling and segregating society could generate persistent differences across families. This institution has been shown to be an important determinant of Black economic progress (Althoff and Reichardt, 2024). Therefore, we ask if part of the childhood environment effect on skin tone inequality is driven by these discriminatory institutions. To understand the importance of these legal environments, we estimate the effect of growing up under different Jim Crow regimes on educational attainment for Black men with different skin tones using a border discontinuity design (Althoff and Reichardt, 2024).

While this codified form of discrimination was important for determining educational attainment for Black individuals overall, we find no evidence of differential impacts by skin tone. Moreover, we find no large differences in exposure to more intense Jim Crow regimes based on state of birth. Taken together, these results suggests that this form of legal discrimination impacted education outcomes for Black people uniformly, regardless of skin color. Furthermore, the dark-skin education penalty remains present across places with different Jim Crow regimes and is approximately of the same magnitude as the Jim Crow penalty we estimate. We interpret this as evidence that there is an additional layer of disparities that is as important as legal barriers but isn't encoded in law but rather in things like social norms and community attitudes. In other words, even after accounting for legal barriers, an additional layer of discrimination remains, one that sorts individuals within the

Black population along skin color lines.

Finally, having found that neither inherited family disadvantage nor exposure to discriminatory legal regimes can fully account for within-race skin tone disparities in earnings, we next turn to a mechanism that operates outside the household and beyond formal law: the social and economic environment of the places where individuals work. If skin tone hierarchies are shaped by local norms, employer behavior, or the structure of local labor markets, then geographic moves should influence skin tone disparities for movers.

We explore the role of adult location by studying Black men who moved between labor markets. We find that moving to a place where the light-dark earnings penalty among non-movers is roughly 1 percent larger increases the earnings gap among movers by roughly the same amount, even conditional on observable characteristics of movers. We find no relationship for pre-move outcomes in 1930, suggesting these results are not driven by selection. These findings suggests that place plays a distinct role in determining these skin tone hierarchies.

The rest of the paper proceeds as follows. In Section 2 we present a brief historical background on the importance of skin color throughout U.S. history. Then in Section 3 we discuss the data and in Section 4 we discuss how we estimate our gaps and our descriptive findings in the data. In Section 5 we describe the mechanisms we test and discuss our findings. In Section 6 we discuss what we will do in further iterations of the paper, then we conclude in Section 7.

2. Historical Context

To understand our estimates, it is important to understand the historical context and the relationship between skin color and race in several key points in U.S. history. We have condensed much of this history for readability and concision. We direct interested readers to the references cited in this section for further in-depth discussion of the historical context.

Colorism, generally defined as a preference for lighter skin, is a feature of United States society that has been documented both in the present and historically from the time of chattel slavery (Frazier, 1930; Reuter, 1917; Toplin, 1979). This phenomenon has inspired

a wide range of research in the social sciences and humanities documenting and tracing out the origins of skin tone based disparities. As mentioned, there is a vast literature examining the existence of these gaps in the present. This literature typically uses surveys to document significant differences in the life trajectories of individuals with different complexions across a wide range of outcomes, across different racial groups, and different countries. It details how skin tone disparities appear across a variety of outcomes such as earnings (Goldsmith, Hamilton and Darity, 2006, 2007), education (Branigan et al., 2013; Monk, 2014), health (Diette et al., 2015; Monk, 2015), and incarceration (Blair, Judd and Chapleau, 2004; Viglione, Hannon and DeFina, 2011). A related strand of the literature examines the historical origins of these gaps (Bodenhorn, 2002, 2006; Bodenhorn and Ruebeck, 2007) as well as traces out the origins within slavery (Reece, 2018). Historical research typically relies on comparisons between individuals racially classified as Black or 'Mulatto' in the Census and documents substantial differences in outcomes including literacy, wealth, and occupational status between these groups (Bodenhorn, 2002, 2006; Bodenhorn and Ruebeck, 2007; Gullickson, 2010; Abramitzky et al., 2023).

Scholars attribute the origin of colorism in the United States to the treatment of enslaved people under slavery. Not only did slavery have long lasting consequences for racial inequality post emancipation (Althoff and Reichardt, 2024), it created boundaries among Black people based on color (Reece, 2018). Some scholars have gone as far to argue that prior to Jim Crow, the system of racial classification in the U.S. much more heavily relied on color groups as opposed to distinct racial binaries (Washington, 2011; Bodenhorn, 2015).

As a result of their presumed white ancestry, lighter-skinned enslaved Black people were consider more intelligent, civilized, attractive, and valuable than their darker-skin Black peers (Reece, 2018; Adames, 2023). These beliefs led to widespread preferential treatment of lighter-skinned enslaved people. They were often assigned positions as house servants, as opposed to labor intensive field work. Additionally, they were afforded opportunities to acquire trade skills and literacy (Reece, 2018). This preferential treatment also meant that lighter-skinned enslaved Black people were more likely to be manumitted (Reece, 2018) such that the majority of free Black people at the time had lighter-skin and were racialized as 'Mulatto.' The white ancestry often provided them relative advantages in free society

that resulted in a higher proportion of lighter-skinned Black people among the business owning freedmen (Bodenhorn, 2015; Reece, 2018).

Although Emancipation opened substantial opportunities for all Black people, the social and economic advantages that accrued to lighter-skinned Black people during slavery gave them a head start. This is evident in the higher levels of occupational status and wealth that lighter-skin Black people had compared to their darker-skinned counterparts (Bodenhorn, 2006; Gullickson, 2010).

These advantages persisted through Reconstruction into the Jim Crow era where the uniform treatment of Black people was codified in "one-drop rule" statutes. Despite the de jure uniform classification of Black people during Jim Crow, preferential treatment for lighter-skinned people continued into the 1940s and 50s. For example, scholars of this period continued to note the prestige associated with having light skin and "white" features and documented a consistent association between lighter-skin and occupational status (Davis et al., 1941; Myrdal, 1944). These intra-racial color hierarchies persisted even into the 1970s where certain elite Black social groups used light-skin and hair texture as selection criterion (Monk, 2021).

Some scholars argue that skin color played a less significant role as a result of the Civil Rights Movement (Gullickson, 2005). However, others cast doubt on the assessment that the importance of color among Black people declined after the Civil Rights Movement (Goldsmith, Hamilton and Darity, 2007; Monk, 2014, 2021; Reece, 2018) and continue to document substantial differences in outcomes among Black people with different skin tones into the present. Skin color continues to play an important role in the racialization and perception of Black people. Today, darker-skin continues to be strongly associated with perceived criminality (Eberhardt et al., 2006; Monk, 2019) and darkening skin has been used to negatively depict political opponents.[6] Despite its historical roots in the Antebellum South, skin color stratification remains a prominent feature of U.S. society in the present.

[6]For instance, the darkening of Barack Obama's skin in campaign ads during the 2008 and 2012 presidential elections. For an example of this being done to negatively depict other racial groups, see the darkening of Zohran Mamdani's skin in campaign ads during the 2025 New York City mayoral Democratic primary.

3. Data

3.1 WWII Draft Registration Data

3.1.1 Background on Draft Registration

Our primary new administrative source of data on skin tone is from the WWII Draft Registration records (1940–1946). It contains information on the universe of men born between 1877–1929 that were **eligible** for the draft during WWII.[7] The data covers approximately 50 million men. Each record contains identifying information as well as a physical description of each individual. We currently have compiled data for 24 million men born between 1898–1929 from 30 states.[8]

These records were created during WWII for the purposes of conducting the military draft and for estimating the total manpower in the United States. To perform the draft, the military required a comprehensive list of individuals from which to draw draftees. The creation of this list was known as the draft registration process. All men between the ages of 18–64 were eventually required to register themselves.[9] The registration process took place over several rounds between the years 1940–1946.

In each round, eligible men, determined by birth date cutoffs, were required to show up to their local draft registration center and register themselves. Registration centers were typically polling places or schools.[10] Registrars were in charge of registering men at these centers and these registrars were typically election officials or teachers.

During the registration process, registrars collected and recorded basic information about each registrant (name, address, date of birth, place of birth, employer) as well as a physical description of the registrant (race, eye color, hair color, complexion, weight, and height). The registrars were in charge of filling out the physical description portion of the

[7] There are a few states whose records were destroyed prior to microfilming, e.g. Maine and some iterations of the Old Man's Draft.

[8] Data collection are ongoing. We currently use data from the following states in our analysis: Alabama, Arizona, Colorado, DC, Delaware, Florida, Idaho, Illinois, Indiana, Kansas, Kentucky, Louisiana, Maryland, Michigan, Minnesota, Mississippi, Missouri, Nebraska, New Mexico, New York City, Ohio, Ohklahoma, Oregon, Pennsylvania, South Carolina, Tennessee, Texas, Virginia, West Virginia, and Wyoming.

[9] Those aged 45–64 were never drafted but were still required to register for the purposes of estimating total manpower

[10] See Figure A.1 for an example of registration centers in D.C.

registration card, but the registrants also verified the correctness of the information on the card. The physical descriptions were primarily used for the purposes of identifying individuals.[11]

3.1.2 Measuring Skin Tone

Each registrar recorded the "complexion" of each registrant according to one of eight standardized categories: sallow, light, ruddy, dark, freckled, light brown, dark brown, black. The categories appear to be ordered from "lightest" to "darkest" on the cards themselves. Since this information was used to identify these individuals later on, we believe that accuracy was a priority. However, we cannot rule out the possibility that the recorded complexion may have been influenced by observable characteristics of the registrants at the time of registration. Since the complexions are recorded by the registrar, we interpret them as perceived skin tone measures.

For simplicity and to facilitate comparisons to other datasets, we aggregate these eight categories into three bins: light, medium, and dark. We exclude the "freckled" and "sallow" categories because of uncertainty regarding their meaning and their limited frequency in the data.[12] We define race-specific light, medium, and dark bins since the original categories appear to be applied in race-specific manners. For example, white registrants are three times as likely to be assigned a "dark" complexion as Black registrants (15% versus 5%). We define light as "light brown," "ruddy," and "light"; medium as "dark brown" and "dark"; and dark as "black." The results are robust to minor adjustments to these categories.[13] A recent literature discusses and provides evidence that race is a socially constructed, context dependent category that can be influenced by wealth and education (Rose, 2023; Adukia et al., 2025). By conditioning on race, we may miss individuals that may have been classified as Black in other contexts. However, we suspect that this would attenuate our estimated skin tone gaps thus our estimates can be considered lower bounds.[14]

[11] As can be seen in Figure A.2 these descriptors were frequently listed in newspaper articles when trying to apprehend draft dodgers.

[12] These categories account for less than 1% of Black men.

[13] Results do not change when moving "dark" from the medium to dark category.

[14] Our results are also not sensitive to using race as measured in the Census or the draft registration records.

While it is difficult to validate these measures at scale, we validated our categories for a sample of people. We collected color photos for 25 famous Black Americans that we could find in the draft data. For each individual, we extracted the skin tone from photos available online as well as their draft card complexion category (light, medium, dark). We plot the extracted skin tones against our categories in Figure C.4. Mapping the extracted skin tones to the color scale used in the NLSY97, we find that our light, medium, and dark categories roughly correspond to the terciles of the color distribution used in the NLSY97.[15]

3.2 Linked Full-Count Census Data

The draft registration cards provide us with information about skin tone, but provide us with almost no information about the outcomes of these individuals. To observe the primary outcomes in our analysis, we use full-count decennial Census data. For our main analysis, we focus on 1940 outcomes and link the draft registration records to the 1940 Census using the automated linking method from Abramitzky et al. (2021). We use first name, last name, year of birth, and place of birth to link between the two datasets, allowing for misspellings in names and requiring unique matches to the Census.[16] We are able to match 435,000 Black men (15% of the draft card sample) to the 1940 Census.[17]

The 1940 Census allows us to observe our primary outcomes of interest including annual wage income, years of schooling, occupation, and other information about the individuals in our sample. Our primary labor market outcome of interest is annual wage income (earnings). Importantly, this measure excludes non-wage income.[18]

To study occupational attainment we construct several outcome measures derived from the occupation categories recorded in the Census. These measures allow us to examine how Black workers with different skin tones sort into occupations along different dimensions. We

[15]For more information on skin tone validation and the extraction see Appendix C.

[16]We do not use race in the linking criteria so that we do not miss potentially racially ambiguous individuals that are classified differently across datasets.

[17]We find some evidence of differential linking bias based on skin tone. Black men in the light category are 2 p.p. more likely to be matched to the 1940 Census conditional on state of registration (16.4% versus 14.4%).

[18]For example income from self-employment is excluded. This is especially relevant for farm related occupations, an important occupation for Black men during this period, where income in the Census is unreported.

define an occupation as "skilled" following Althoff and Reichardt (2024) based on whether it is categorized as "medium skilled" or above based on the HISCLASS occupation scheme. Similarly, we define an occupation as "supervisory" if it involves supervision over others under the HISCLASS scheme (Leeuwen and Maas, 2011).[19] We also consider the degree to which an occupation requires interaction with others. We use the occupation contact measures from Hsieh et al. (2019) which are derived from the O*NET task descriptions for each occupation. The occupation with the highest contact measure in our data is "Midwives." We classify an occupation as "high-contact" if it has an above median contact measure. Finally, we consider the degree to which each occupation has high barriers to entry for Black workers. For each Census occupation, we estimate occupational frictions following Hsieh et al. (2019) that capture barriers to entry from costs of human capital, discrimination in the labor market, and preferences and norms. We define "high-barrier" occupations as those with above median positive estimated occupation frictions. The occupation with the highest barrier to entry for Black men is "engineers" and the lowest is "porters."

Finally, when necessary, we also link individuals from the 1940 Census to the 1900–1950 decennial Censuses using the links from the Census Linking Project (Abramitzky, Boustan and Rashid, 2020). The linkages and variables used from these Censuses are described in more detail where relevant.

3.3 Sample

Our main analysis sample consists of Black men between the ages of 18 and 45 in 1940 who have a valid recorded skin tone from the draft registration records.[20] This sample consists of 311,000 Black men. The skin tone distribution across our binned categories in this sample is 27% light, 48% medium, and 25% dark.

From Table 1 we can see our linked sample is highly-balanced on observable characteristics to the unmatched 1940 Census population. For instance, the annual wage income of our linked sample is $806 compared to $788 for the unmatched group. Overall, we find

[19] Examples include higher managers, lower managers, and foremen.

[20] We use the racial categories assigned in the Census. Results are robust to use the racial categories from the draft registration records.

that the linked Census sample is comparable to the unmatched population across labor market outcomes, occupation and industry composition. The major difference is that the linking rates for Black men are lower than white men, so we underestimate the Black share of the population. Additionally, the linked sample has slightly higher educational attainment of around 0.5 additional years of schooling (4% higher). And we see some regional overrepresentation with higher rates of people from the Midwest and West (46% vs 33% and 5% vs 3%) and lower rates from the North (17% vs 29%).

4. The Light–Dark Skin Tone Gap

This section documents gaps in annual wage income, education, and occupation in 1940 between Black men with lighter versus darker skin, which we call the "skin tone penalty." We find that these gaps are large and driven by differences in educational and occupational attainment.

4.1 Estimates of Light–Dark Earnings Gaps

We estimate skin tone gaps β_s ($s \in \{m, l\}$) in our outcomes of interest y_i for light- and medium-skinned Black men relative to dark-skinned Black men according to:

$$y_i = \alpha + \beta_m \cdot \mathbb{1}\{s_i = m\} + \beta_l \cdot \mathbb{1}\{s_i = l\} + \Pi' \mathbf{X}_i + \epsilon_i \tag{1}$$

where s_i is our categorical measure of skin tone: light, medium, and dark. β_m and β_l measure the conditional difference in outcome y_i between Black men with medium and light skin respectively. $\mathbf{X}_i$ is a vector of controls that includes age fixed effects in our baseline specification. We also include state of residence, labor market area, metropolitan status, education, occupation, and industry fixed effects in other specifications. We focus the bulk of our discussion on the light–dark gap β_l.

We begin by estimating differences in log annual wage earnings. We find large differences in annual earnings between Black men with lighter versus darker skin. In 1940, the unconditional skin tone earnings gap is approximately 34 log points ($\sim 40\%$). This gap is

economically large and equal to roughly half the Black-white earnings in this period. The gap between medium and dark skin is also large at around 20 log points ($\sim$ 22%). Together, these estimates demonstrate that Black men with dark skin were earning substantially less than their lighter skinned peers.[21]

Next, we consider the extent to which these gaps reflect differences in observable wage determinants. Controlling for observable characteristics reduces the earnings gap substantially. When adding in controls for educational attainment, occupation, and industry we reduce the light–dark gap to around 25%. Additionally controlling for location characteristics like metropolitan status and labor market area further reduces the gap to 5.6%. However, these additional controls are also impacted by skin tone and therefore may be viewed as "bad controls." Yet, it is notable that even with this strict set of controls, which explain a substantial share of the variation in log earnings ($R^2 = 0.39$), 16% of the unconditional skin tone penalty remains unexplained.

Geographic Heterogeneity. Given that location characteristics explain part of these earnings gap, we examine regional heterogeneity. We split up the U.S. intro three groups based on historical considerations and cultural differences. We first split states vertically into Northern and Southern states. We additionally split the South into "Upper" and "Lower" South states. These states have relatively different cultural and economic landscapes. Lower South states primarily relied on plantation economies and seceded from the North during the Civil War. Scholars also suggest that skin tone hierarchies evolved differently in these regions (Jones, 2000).

We find substantial heterogeneity between the South and North. Figure 2 presents estimates of the conditional skin tone earnings gaps separately in each region controlling for age and state of residence fixed effects. The light–dark gap in the Lower South and Upper South is 21% and 24% respectively. The earnings gap in North, however, is around half as large at around 12%.[22] These patterns are roughly consistent with differences in the

[21] On average, we do not see a gap in the extensive margin (employment or hours work) that drives this, but that masks substantial regional differences.

[22] In Table A.1 we find that in the Lower South while the wage penalties associated with darker skin are sizable, there are no large differences in employment or hours, suggesting that the skin tone gap operates primarily through wage setting. In the Upper South and especially the North, the pattern shifts: lighter-skinned men work more weeks and more hours, and in the North they are also more likely to be employed.

Black-white gaps between these regions. The North and South also differ in terms of the relative status of medium-skinned Black men. Together, these results suggest that regional differences (culture, institutions, and history) may have contributed to different regional skin tone hierarchies.

4.2 Educational and Occupational Attainment Gaps

While occupation and education explain part of the differences in earnings between lighter- and darker-skinned Black men, these outcomes are influenced by skin tone themselves. We examine differences in these upstream wage determinants to understand the influence of skin tone at earlier parts of the labor market trajectory.

Educational Attainment. We find systematic differences in educational attainment between Black men with lighter versus dark skin tones. In our baseline specification, Black men with light-skin have 25% more years of schooling, which is approximately 1.9 years of additional schooling. The gap between medium-skin and dark-skin is 10%. Figure 3 displays the estimated skin tone education gaps by region while also controlling for state fixed effects. The pattern closely mirrors that for the earnings gaps, with larger differences in the Upper and Lower South (around 20%) compared to the North (12%). These results indicate that Black men with different skin tones have different experiences prior to entering the labor market, even within the same state.

Occupational Attainment. Having shown that Black men with different skin tones have different educational experiences, we now consider the extent to which they are differentially sorted into different occupations. These differences in occupation choice may be driven by the educational disparities, preferences, or treatment in the labor market. We consider four dimensions of occupation: skill, supervision, Black barriers to entry, and contact with others (see Section 3 for a description of each category).

We begin with skilled, supervisory, and high barrier occupations which are all associated with higher wages and status. Figure 4 plots the estimated light–dark skin tone gap in each category by region, controlling for age and state fixed effects. We find that Black men with

This suggests that skin tone impacts the intensive and extension marge of labor supply in Northern labor markets, not just in wages.

lighter-skin are substantially more likely to work in each of these occupation categories. For instance, light-skinned Black men in the South are more than twice as likely to work in occupations with high barriers for Black men (8.8% versus 4%). The differences are similar for skilled and supervisory occupation. Similar to our other results, the differences are smaller in the North, around half as large for these categories. These differences are not just a result of the educational attainment gaps. Additionally controlling for education only reduces the estimated gaps by 35%. These results indicate that Black men are differentially sorted into high-wage occupations based on skin color, even conditional on education.

Finally, to assess the potential role of preferences, we consider differences in the likelihood of working in an occupation with a high level of contact with others.[23] Hsieh et al. (2019) show that Black-white differences in the share of workers in high-contact occupations is highly correlated with survey based measures of taste-based racial preferences, suggesting the differential attainment is driven by preferences for interacting with different groups. Again, we find large differences in the probability of working in a high-contact occupation based on skin color. Black men with light-skin are roughly 1.7 times more likely to work in these occupations and the effects are smaller, but still significant, in the North. These results suggest that at least part of the occupational sorting may be driven by preferences for skin tone.

5. Mechanisms Behind the Skin Tone Penalty

We can think of the estimated unconditional skin tone gaps in the previous section as capturing the combined effects of color-based discrimination, differences in ability or unobserved productivity, and differences in family resources and childhood environments. In this section, we try explore the relative contribution of these factors. We find that parental endowments and childhood environments account for a substantial portion of the light–dark gap, but a signification portion remains unexplained. Additional evidence suggests that locations, rather than individual characteristics, plays an important role in explaining these residual disparities.

[23] This includes co-workers and customer contact.

5.1 Intergenerational Transmission and Family

Historical evidence suggests that differential treatment by skin color emerged during slavery (Reece, 2018). This meant that individuals with different skin tones started with different resources and human capital after the end of slavery (Bodenhorn, 2002; Bodenhorn and Ruebeck, 2007). Given that skin color is a heritable trait, differences in outcomes in 1940 may be driven in part by inherited (dis)advantage across generations.[24] In this section, we consider how much of the estimated skin tone penalties can be explained by differences in family resources and childhood environments between light- and dark-skinned Black men.

5.1.1 Identification Strategy and Sample

To measure the importance of these intergenerational factors, we compare individuals with different skin tones that share a parent and grew up in the same household as children. This comparison fixes the differences between parental resources and childhood environment between individuals with different skin tones. To implement this design, we estimate augmented versions of Equation (1) with family fixed effects:

$$y_i = \alpha + \beta_m \mathbb{1}\{s_i = m\} + \beta_l \mathbb{1}\{s_i = l\} + \Pi' \mathbf{X}_i + \gamma_{f(i)} + \varepsilon_i \tag{2}$$

where $\gamma_{f(i)}$ is a family membership indicator for individual i.

Even with family fixed effects, β_l may combine conditional differences in unobserved ability as well as the color-based discrimination component. We assume that within families there is no correlation between ability and skin tone and interpret β_l as capturing differences in outcomes attributable to differential treatment based on skin color. In the case of earnings, this measures differential treatment both in the labor market and prior to entering.

To identify family membership, we link the Black men in our main analysis sample to the 1900–1930 Censuses and use the parent location variables to identify the parents of each individual. We do not impose that both parents have to be in the household. We assign

[24] While skin color is heritable, it is determined by a large number of genes (polygenic). This means that the skin tone of children can vary substantially for the same set of parents and is not necessarily a convex combination of their parent's skin tones.

individuals in our sample to the same family if they had at least one identical parent in one Census between 1910 and 1930. We also require siblings to be of the same race.[25] This leaves us with around 5,000 Black families comprised of 11,000 individuals overall. The β_m and β_l parameters are identified off families with children of different skin tones. We have 2,600 families where at least two members have different skin tones, allowing us to identify these coefficients. We include all the families in the estimation sample, because families with no skin tone variation help us estimate the other coefficients in the regression.

5.1.2 Estimates of the Skin Tone Gap with Family Fixed Effects

Since the sibling sample is more selected than our full analysis sample, we first check robustness by re-estimating our baseline skin tone gaps on the sibling sample. As shown in Figures 5 to 7 the estimates are very similar to our main sample. For example, the earnings gap controlling for age is 38 log points in the sibling sample versus 34 log points in the full sample.

We then ask what happens to the estimates when adding the family fixed effects. What is striking is that in Figure Figure 5 our point estimates for educational attainment go to zero when adding the fixed effects. However, this is not the case for the earnings gaps within families. The point estimates for the log earning gaps in Figure 6 do decrease when adding the fixed effect but a 7.7 log point gap persists, leaving around 20% of our original gap unexplained. This is similar to the estimates we get in our most controlled specification in our descriptive analysis of the earning gaps in Figure 1. Next, we examine whether children from the same family with different skin tones still differentially sort into different occupations. The estimates in Figure 7 indicate that lighter-skinned Black men from the same family are not more likely to be in skilled, supervisory, or high barrier occupations. However, they are still 25% more likely to be in high contact occupations than their darker-skinned siblings.

Taken together these results indicate that while parents may invest a similar amount in education for each child, there are factors aside from family background that lead lighter-

[25] In robustness checks we require siblings to have a maximum age difference of 10 years and our results are the same.

skinned siblings to earn more and have greater access to high contact occupations. These findings are consistent with a role for skin color-based discrimination in shaping economic inequality–even among individuals raised in the same household. We can see from our results that while parental resources and human capital matter, they do not fully account for the advantages observed among lighter-skinned individuals.

Our analysis is very similar to the analysis in Abramitzky et al. (2023) where the authors compare sibling by gender that are coded as "Mulatto" versus "Black" in the 1870–1920 Censuses. They find significant differences in outcomes for female siblings, particularly in educational attainment and marriage, but no differences for male siblings. Unlike the authors, we only focus on men given the nature of the draft registration data. However, as mentioned above we **do find a difference** between men with the lightest and darkest skin tones, particularly in earnings and occupational attainment. The gaps are as large as the point estimates for the controlled differences in the population overall. These result counters the narrative that there was a "dominance of the "one drop" classification" at least by 1940 when we are conducting our analysis. Even though differences in geography, educational access, and family wealth have been shown to meaningfully affect outcomes (Carruthers and Wanamaker, 2017; Althoff and Reichardt, 2024; Derenoncourt et al., 2024), our gaps by skin tone among Black men are not entirely driven by differential access to parental opportunities and resources.

The differences between Abramitzky et al. (2023) and our results could be due to a variety of factors. The biggest difference between our analysis and theirs is our different sources of skin tone. They use the categories of Mulatto and Black to indicate lighter versus darker skin tones. Instead we use our third party data with detailed categorizations of complexion from the Draft Registration boards. This leads us to potentially categorize a different set of siblings as light versus dark, which may also allow for greater variation than the Black/Mulatto categories.[26] We demonstrate in Figure A.3 that there is still substantial variation in skin tones within both the Black and Mulatto race groups in 1920 based on our measure. Furthermore, when we estimate the light-dark earnings gaps separately in

[26]For some additional historical context on Census classification and the use of these categories please see Appendix C.

each of these race categories in Figure A.4, we find that there are still skin tone earnings gaps in both groups. Therefore, one explanation for why we see differences in our results compared to Abramitzky et al. (2023), is that there is still meaningful skin color variation among those classified as Black in the Census. Our data suggests that the Black racial category in the Census is not necessarily synonymous with having darker skin. Therefore, the Black-Mulatto comparison may attenuate the actual differences in outcomes between siblings with the lightest and darkest skin tones. Finally, we categorize people as siblings in a slightly different manner than Abramitzky et al. (2023). Meaning that some of the differences could arise from our differences in family construction.

5.2 Jim Crow and The Role of Institutional Environments

Another important determinant of economic outcomes is the institutional environment individuals are exposed to in childhood and adulthood, which can often differ across places. In the 1940s, the South in particular was shaped by differences in the intensity of state-level Jim Crow regimes. Exposure to harsher forms of institutionalized racism has been shown to substantially affect Black economic outcomes (Althoff and Reichardt, 2024).

When considering how institutional environments might affect our estimated skin tone gaps, one possibility is differential childhood exposure to Jim Crow laws. If darker-skinned Black men were more likely to grow up in states with harsher Jim Crow regimes, then part of the reduction in the gap after adding family fixed effects could simply reflect those institutional differences. However, we find that Black men with dark-skin were 3 p.p. (5%) *less* likely to be born in a state with high Jim Crow intensity.[27] This suggests that differential exposure is not an important component of the family effects.

A second channel through which Jim Crow could contribute to the observed skin tone gaps is differential treatment under the same institutional regime. In this case, the same Jim Crow environment might have imposed harsher constraints on darker-skinned individuals. Such effects would appear in the portion of the skin tone gap that remains even after controlling for family fixed effects. In the next section, we examine whether Black men

[27] Jim Crow intensity is measured using the Historical Racial Regime (HRR) index from Baker (2022) following Althoff and Reichardt (2024). High is above the state-level median.

with darker skin were disproportionately affected by growing up under more intense Jim Crow regimes. We find that while Jim Crow severely impacts Black people overall, there is no evidence of differential impacts from having lighter versus darker skin on educational attainment

5.2.1 Identification Strategy and Sample

Following Althoff and Reichardt (2024), we estimate the influence of institutional environments using a border discontinuity design. This approach compares individuals that grow up under different Jim Crow regimes because they were born on different sides of state borders. Under the assumption that noninstitutional factors vary continuously and institutional features vary discontinuously across state borders, this informs us about the role of institutional environments.

Specifically, we estimate the following regression separately for Black men with light- and dark-skin:

$$y^s_{i,b} = \alpha^s + \beta^s \cdot \text{High}_{i,b} + \gamma^s \cdot d_{i,b} + \psi^s \cdot d_{i,b} \cdot \text{High}_{i,b} + \varepsilon_{i,b} \tag{3}$$

where $y^s_{i,b}$ is the outcome of interest, measured in 1940, for individual i of skin tone $s \in \{l, d\}$ that grew up near border b. $\text{High}_{i,b}$ indicates whether individual i's childhood county was on the side of border b with a more intensive Jim Crow regime and $d_{i,b}$ is the distance between border b and the centroid of i's childhood county. Jim Crow intensity is measured using the Historical Racial Regime (HRR) index (Baker, 2022), which captures the intensity of a state's anti-Black institutions. The coefficients of interest β^l and β^d capture the effect of growing up under a more oppressive regime for Black men with light- and dark-skin respectively. To validate the design, we present estimates of Equation (3) separately for borders that strongly ("high contrast") and weakly differ in their Jim Crow intensity.[28]

To estimate Equation (3), we need to observe the childhood locations of each individual in our main analysis sample. We link each person to the 1910–1930 Censuses and assign

[28] States pairs are high-contrast if the difference between their HRR index is above the median across all state pairs.

them the earliest county we observe them in as their childhood county. If we do not observe an individual in any Census when they were younger than 15 then we do not assign them a childhood location. We are able to assign childhood locations to 80,000 Black men, 35,000 of which are in the estimation sample because their childhood county is along a Jim Crow border.[29]

5.2.2 Estimates of the Jim Crow Effect

Educational restrictions were a key aspect of Jim Crow laws, therefore we follow Althoff and Reichardt (2024) and focus on years of schooling as our outcome of interest. We replicate the main results of their paper for our sample in Figure 8. We find that there is a large difference in years of schooling (1.3 years) in high contrast borders (Panel (a)) when moving from more oppressive to less oppressive Jim Crow regimes for Black people overall. We find no effect when comparing individuals that grew up on different sides low contrast borders.

Now we estimate these regressions separately for individuals with different skin tones in Figure 9. We find there is no differential impact of Jim Crow by skin tone. Even in the high contrast borders in Panel (b) we see that there is a jump up in years of schooling for both light- and dark-skinned Black people when moving from more to less oppressive regimes, but the amount of the increase is the same for both groups (1.35 and 1.21 respectively). Our estimates are also informative about the magnitude of the dark-skin education penalty. Figure 9 demonstrates that the penalty from growing up in a more oppressive Jim Crow regime on education is as large as the penalty of having dark skin. This dark-skin penalty remains present across places with different regimes. This suggests there is an additional layer of disparities operating on skin tone that is as important as legal barriers but isn't encoded in law but rather in behavior or norms.

[29] 80% of the linked sample was born in the South, which lines up with the overall share of our main sample that listed a Southern state as their birthplace in the 1940 Census. We exclude Arkansas, Georgia, and North Carolina which are the Southern states that we currently do not have draft registration records from. We hope to incorporate these states in the future.

5.3 Location versus Individual Characteristics

In the previous sections, we found that parental resources and childhood environment can explain a large share of the light-dark earnings gap but around 20% remains unaccounted for. This residual difference combines differences in unobserved wage relevant characteristics, such as ability or social networks, as well as the differential effects of locations, which may include the effects of local norms, employer behavior, or the structure of local labor markets. In Section 4 we found differences in earnings remain even controlling for a rich set of observable wage determinants, suggesting differential place effects may be relevant. This section explores this further by comparing the light-dark gap for individuals that move between labor markets. The evidence is consistent with location effects being a relevant component of light-dark earnings differences.

5.3.1 Identification Strategy and Sample

To understand the importance of treatment in the labor market versus differences in individual characteristics we use evidence from movers. If individual characteristics play a dominant role, then the light-dark gap for groups of individuals that move to different labor markets shouldn't depend much on the light-dark gaps of native residents in those places. Ideally, we would randomize Black men with different skin tones across labor markets with different skin tone penalties and see how the light-dark gap varies. To approximate this experiment, we run the following regression:

$$y_i = \alpha + \delta \cdot L_i + \lambda \cdot \hat{\phi}_{d(i)} + \beta \cdot \hat{\phi}_{d(i)} \cdot L_i + \mathbf{X}_i'\Gamma + \mu_{o(i)} + \mu_{o(i)} \cdot L_i + \mu_{d(i)} + \nu_i \qquad (4)$$

where L_i is an indicator for having light-skin, $\hat{\phi}_{d(i)}$ is the estimated conditional light-dark gap in destination $d(i)$, $\mathbf{X}_i$ are controls (age fixed effects in the baseline specification), and $\mu_{o(i)}$ and $\mu_{d(i)}$ are origin and destination labor market fixed effects.[30] We use State Economic Areas (SEA) so as our notion of labor markets. These are groups of counties with

[30] $\hat{\phi}_d$ is the residualized light-dark earnings gap in destination d. Log earnings are residualized at the state-level controlling for education, occupation, industry, and metro status fixed effects, then residual earnings gap are estimated in each SEA using the non-movers sample.

similar economic characteristics in 1950.

β is the primary coefficient of interest, and it captures how the light-dark gap for movers varies with the light-dark gap for non-movers in each destination. For example, a coefficient of one indicates that for each 1% increase in the native light-dark earnings gap, the gap among movers to that destination is 1% larger. Our main identification assumption for β is that movers with different skin tones from the same origin do not differentially sort across destinations.[31]

To estimate Equation (4) we need to observe individuals that move between labor markets. We construct a sample of individuals that moved between 1930–1940 from our main analysis sample in two ways. First, the 1940 Census asks about each person's location 5 years ago. If an individual's 1940 SEA is different from their 1935 SEA we include them. To expand our sample, we also link each individual to the 1930 Census. If their 1930 SEA is different than their 1940 SEA we also include them.[32] We additionally restrict to Black men that moved out of the South between 1930–1940. We make this additional restriction under the assumption that these large moves, which were likely a part of the Great Migration, are less sensitive to selection issues. We identify around 10,000 movers that meet these criteria or around 7% of our sample of men living in the South in 1930.

5.3.2 Movers Estimates

We find that the light-dark earnings gaps among natives are highly predictive of the earnings gaps for movers to those destinations. In Table 2 our baseline specification shows that $\hat{\beta} = 1.03^{**}(0.51)$ indicating that for each 1% increase in the native earnings gap, the light-dark gap among movers increases by roughly the same amount. The coefficient remains similar even when controlling for our usual set of wage determinants and for 1930s mover characteristics, further strengthening the evidence that this relationship is driven by location effects. Moreover, we find no relationship between the destination light-dark gap and the light-dark gap in the individual's origin location. In Table 3 we assess whether this

[31] In future iterations, we plan to instrument for destination.

[32] In the case where someone is a mover according to both their linked 1930 SEA and their 1935 SEA reported in the 1940 Census, we use the 1935 SEA to avoid measurement error due to linking.

relationship is driven by selection. We use pre-move outcomes that are observable in 1930 and find no relationship between destination light-dark earnings gaps and pre-move years of schooling or occupation income scores, suggesting at least limited scope for selection on observables.

We cannot say anything about the relative importance of location versus individual characteristics from this exercise alone. However, we can reject the idea that the light-dark earnings gaps across locations are solely driven by differences in individual characteristics between Black men with different skin tones. The results presented are inconsistent with a story where there are no place effects. Location characteristics appear to be an important part of local skin tone hierarchies. Further work is needed to learn about the relative importance of location versus individual characteristics and about the underlying sources of these differential location effects.

6. Future Steps

In future iterations of this project we will build on the current analysis with additional outcomes and robustness. We also plan to explore several additional avenues for testing mechanisms and bringing our results into the present.

Evolution of skin tone inequality. Another way to learn about the sources of intra-racial inequality and how they interface with racial inequality is to compare the evolution of the two over time. We are currently working on building a harmonized time series of skin tone gaps in earnings, occupation, and education from 1940–present using a mix of various surveys. We hope this will provide additional insights on skin tone inequality, its underlying sources, and its relationship with racial inequality.

Structure of racial inequality. In sections of our paper we discussed how Black-white comparisons can mask changes in structure of racial inequality among Black Americans. We are working on comparing skin inequality in 1940 to the present and asking how racial convergence in labor market characteristics and returns to those characteristics has changed the structure of racial inequality. As labor-market opportunities and the returns to skills have converged across races over the 20th century, the forces producing inequality for Black

Americans may have shifted toward dimensions such as skin tone. To assess these changes in structure, we compare skin tone inequality in 1940 to contemporary data and trace how the convergence in education, occupation, and wages has altered the relative importance of within-race skin tone disparities versus between-race gaps.

The importance of firms. Finally, our results currently suggest a significant role for place effects in determining skin tone gaps. At this point we cannot say much about the underlying drivers of the location effects. Given recent work highlighting the role of firms in labor market inequality we hope to further explore the importance of firms in our setting. We are able to observe the employer at the time of registration for each registrant. We hope to match this data to Fair Employment Practices Committee investigations, as well as war contracting data, thus using this information to learn about the role of firms, anti-discrimination initiatives (Collins, 2001), and their contributions to the effects of location.

Underlying sources of location effects. In addition to firms, we hope to estimate changes in place-specific skin tone gaps from 1940 to 1950 and see how these vary with different characteristics of places to shed light on correlates of location effects.

7. Conclusion

This paper demonstrates that the economic disparities faced by Black men in the early twentieth century were not uniform, but stratified along skin color. By moving beyond the standard Black–white comparison using newly linked administrative records, we show that skin tone is a central determinant of economic outcomes. If all Black men had the same average earnings as Black men with light-skin, the Black-white earnings gap in 1940 would close by 25%. Documenting these disparities builds on a rich interdisciplinary literature. Our main contribution is providing new evidence on the forces behind skin color hierarchy, showing that multiple distinct mechanisms sustained the dark-skin penalty.

We find that family background explains most of the skin tone differences in education, yet family effects leave 20% of the earnings gap unexplained. This points directly to differential treatment in the labor market that operates within families and among individuals with

similar human capital. Our analysis of childhood institutional environments suggests that our documented skin tone penalties functioned separately from the codified racism of the period. Jim Crow laws lowered schooling outcomes for Black individuals as a group and did so uniformly across the skin tone spectrum. The persistence of the dark-skin penalty across different Jim Crow regimes therefore indicates that formal legal discrimination was not the primary driver of these within-race differences. Instead, it indicates an additional, informal layer of prejudice embedded in social norms and interpersonal interactions. Our movers analysis further underscores the role of location. Black men who moved into labor markets with larger pre-existing light–dark penalties experienced larger gaps themselves, even after conditioning on their pre-move characteristics. This finding suggests that place-specific norms and labor-market practices are a relevant determinant of skin tone differences.

These results have important implications for how economists study racial inequality and think about policy. We show that inherited resource gaps (reflected in family determinants of education) and differential treatment (reflected in residual earnings penalties and the role of adult location) operate through distinct channels. Interventions that address only unequal resources or childhood environment, while essential, cannot eliminate disparities if labor markets continue to penalize individuals based on skin color. Moreover, while the end of Jim Crow and legal discrimination was an important contributor to Black economic progress during the 20th century, our results suggest that there are additional factors as important as these legal barriers operating along color lines within the Black community. These forces may be an important feature of stalling racial convergence and further understanding them is a potentially fruitful direction for future work that can provide important insights.

Taken together, our findings demonstrate that studying racial inequality requires accounting for the substantial within-race heterogeneity. The substantial penalty borne by darker-skinned Black men in 1940 reflected both the historical legacy of discriminatory institutions transmitted through family resources and an additional, norm-driven form of discrimination that operates outside the institutional environment. Because contemporary evidence suggests that skin tone hierarchies continue to be an important feature of U.S. society, addressing racial inequality today requires confronting both the inherited disadvantages and the ongoing social and institutional practices that reproduce color-based stratification.

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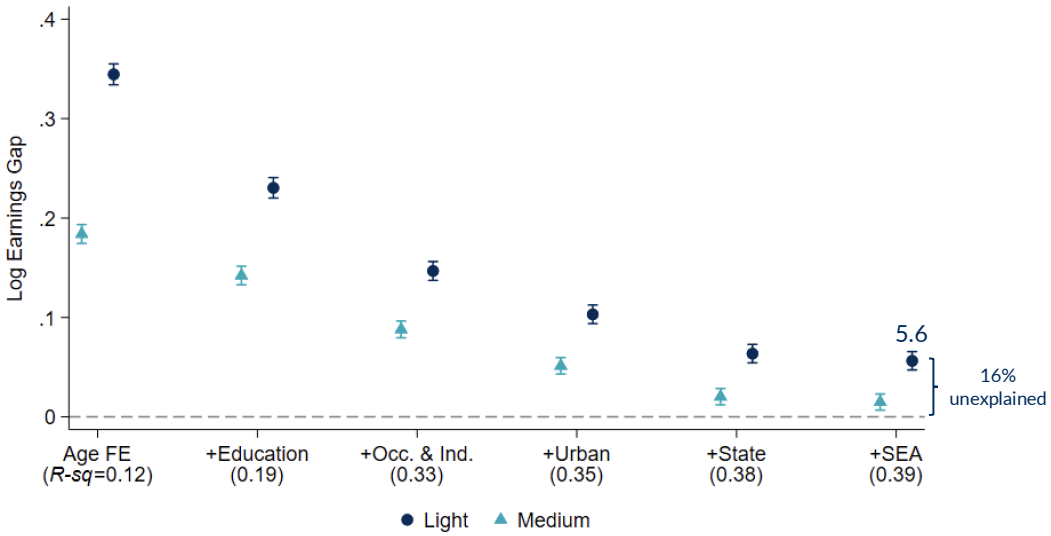
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Tables and Figures

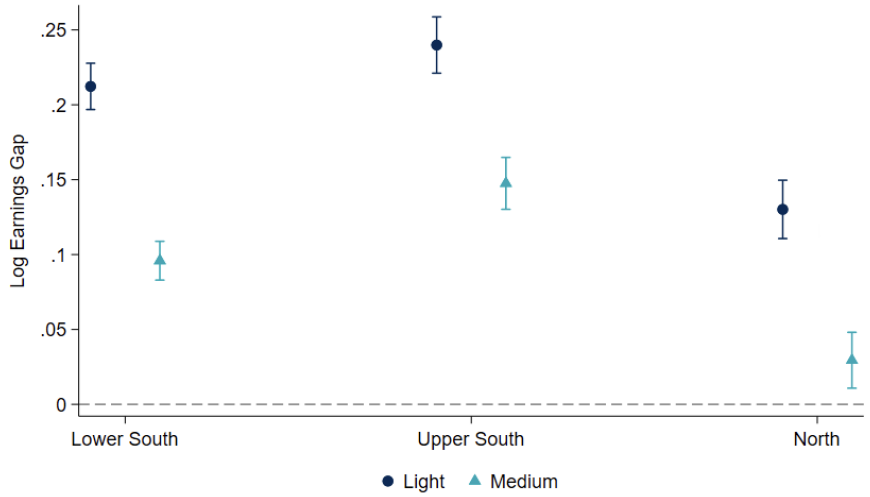
Figures

FIGURE 1
Skin Tone Earnings Gap in 1940



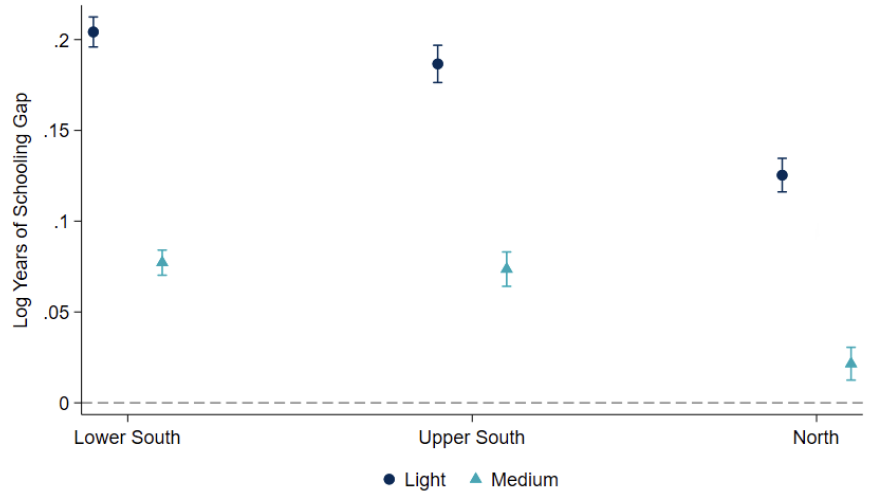
Note: Each point reports the estimated log earnings gap between light- and dark-skinned Black individuals as well as medium- and dark skinned Black people. Controls are added iteratively with each column representing a separate regression. The first column (baseline) includes age bin fixed effects. Column 2 adds education bin fixed effects. Column 3 adds occupation and industry major categories. Column 4 controls for metropolitan status. Column 6 includes state fixed effects. Lastly, column 6 includes state economic area (SEA) fixed effects.

FIGURE 2
Skin Tone Earnings Gap by Region



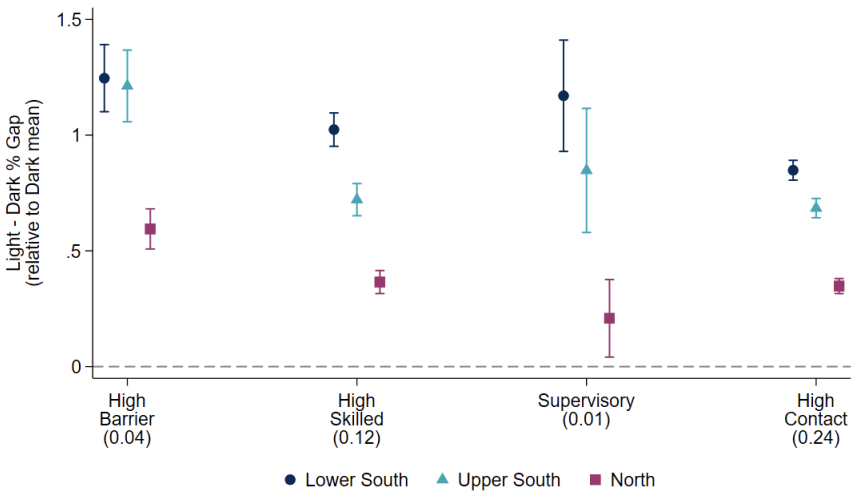
Note: Each bar reports the estimated log wage gap between light- and dark-skinned Black individuals as well as medium- and dark skinned Black people for our three regional groups. Lower South consists of Alabama, Florida, Georgia, Louisiana, Mississippi, South Carolina, and Texas. Upper South consists of Arkansas, Delaware, D.C., Kentucky, Maryland, Missouri, North Carolina, Oklahoma, Tennessee, Virginia, and West Virginia. North consists of Connecticut, Illinois, Indiana, Maine, Massachusetts, Michigan, New Hampshire, New Jersey, New York, Ohio, Pennsylvania, Rhode Island, Vermont, and Wisconsin. Each regression controls for state and age bin fixed effects in each specification.

FIGURE 3
Skin Tone Education Gap by Region



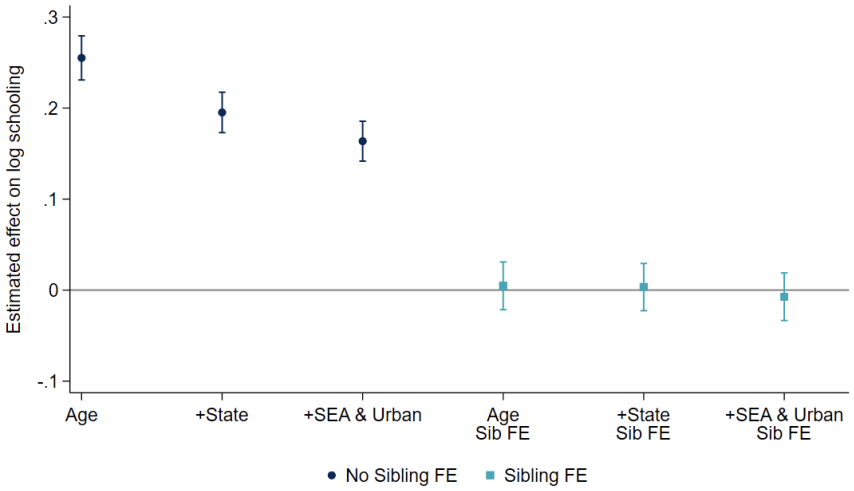
Note: This figure presents the difference in log years of schooling between light- and dark-skinned Black individuals as well as medium- and dark skinned Black people by region (see Figure 2 for a description of the regions). Each regression controls for state and age bin fixed effects.

FIGURE 4
Light–Dark Occupational Attainment Gaps by Region



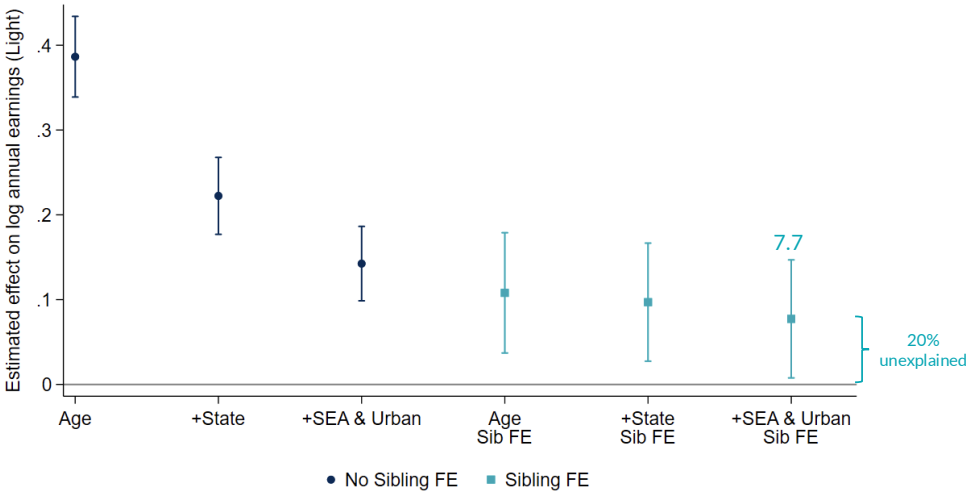
Note: This figure displays the gap light-dark in various occupational attainment measures by region (see Figure 2 for a description of the regions). See Section 3.2 for a description of each measure. Each regression controls for state and age bin fixed effects.

FIGURE 5
Light–Dark Schooling Gap with Family Fixed Effects



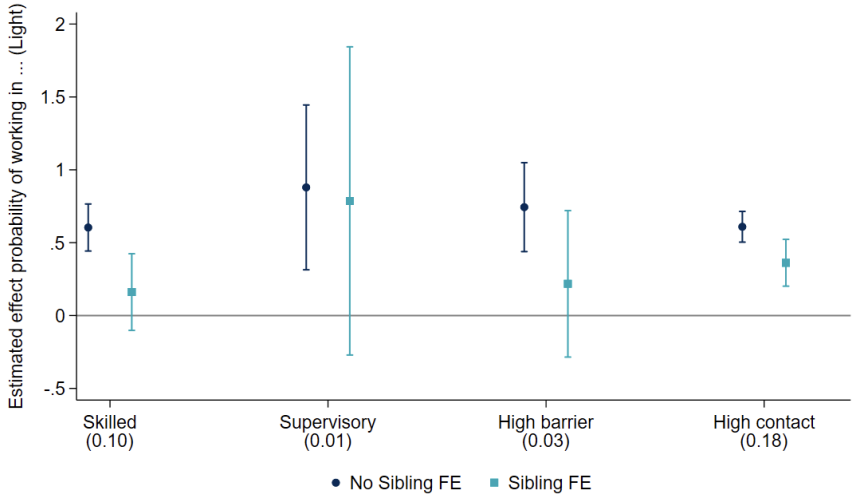
Note: This figure displays the estimated difference in log years of schooling between light- and dark-skinned Black men from the same family. Each column presents the coefficient on the Light indicator from a separate regression. The first three reproduce our estimates with no family fixed effects. The remaining three are the same specifications but adding family fixed effects. Additional controls are added iteratively moving from left to right. The baseline specification includes age bin fixed effects.

FIGURE 6
Light–Dark Earnings Gap with Family Fixed Effects



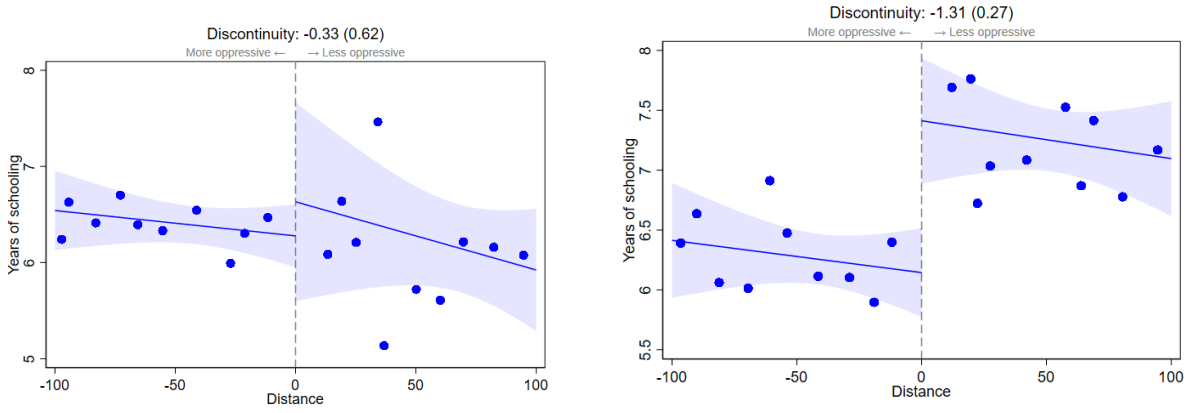
Note: This figure displays the differences in log earnings between light- and dark-skinned Black siblings using sibling fixed effects. Each column presents the coefficient on the Light indicator from a separate regression. The first three reproduce our estimates with no family fixed effects. The remaining three are the same specifications but adding family fixed effects. Additional controls are added iteratively moving from left to right. The baseline specification includes age bin fixed effects.

FIGURE 7
Light–Dark Occupational Attainment Gap with Family Fixed Effects



Note: This figure displays the differences in the probability of working in different types of occupations between light- and dark-skinned Black siblings using family fixed effects. See Section 3.2 for a description of each occupation measure. Each regression controls for age bin, SEA, metropolitan status, and family fixed effects.

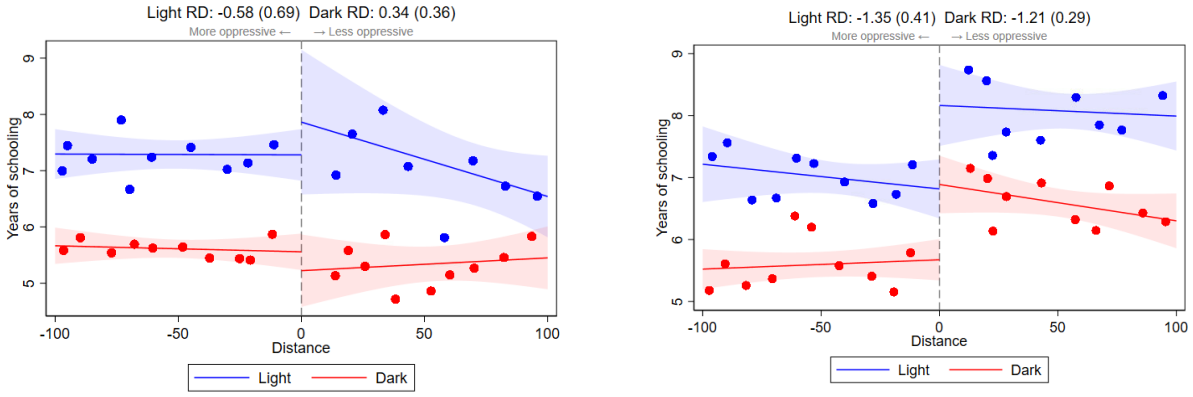
FIGURE 8
Jim Crow RD – Years of Schooling



(a) Low contrast borders (b) High contrast borders

Note: This figure presents the regression discontinuity estimates on years of schooling in 1940 for Black men that grew up across state borders with different Jim Crow intensity. Jim Crow intensity is measured via the Historical Racial Regime (HRR) index (Baker, 2022). Panel (a) shows "low-contrast borders" where it differs across borders by less than the median; Panel (b) shows "high-contrast borders" where Jim Crow intensity differs more than across the median border. The left half of each panel represents more oppressive states and the right less oppressive. Each dot is the average across a decile of the border population. Lines show the best linear fit. Shaded areas represent 95% confidence bands clustered at the 1940 childhood county level. Methodology and Jim Crow measures are from Althoff and Reichardt (2024) estimated on our sample of Black men that can be matched back to childhood counties.

FIGURE 9
Jim Crow RD by Skin Tone – Years of Schooling



(a) Low contrast borders (b) High contrast borders

Note: This figure presents the regression discontinuity estimates on years of schooling in 1940 separately for Black men with light- and dark-skin that grew up across state borders with different Jim Crow intensity. Jim Crow intensity is measured via the Historical Racial Regime (HRR) index (Baker, 2022). Panel (a) shows "low-contrast borders" where it differs across borders by less than the median; Panel (b) shows "high-contrast borders" where Jim Crow intensity differs more than across the median border. The left half of each panel represents more oppressive states and the right less oppressive. Each dot is the average across a decile of the border population. Lines show the best linear fit. Shaded areas represent 95% confidence bands clustered at the 1940 childhood county level. Methodology and Jim Crow measures are from Althoff and Reichardt (2024) estimated on our sample of Black men that can be matched back to childhood

Tables

TABLE 1
Summary Statistics: Linked vs. Unlinked Census Samples

	Linked Sample	**Unlinked Census Sample**
Age	29.63	30.95
Black	0.07	0.11
Years of schooling	9.53	9.09
High school graduate	0.33	0.30
Annual earnings	806.05	788.19
Log earnings	6.62	6.58
Moved states in the last five years	0.66	0.66
Weeks worked	37.64	36.39
Hours worked per week	33.90	32.61
Urban	0.58	0.59
Census region: North	0.17	0.29
Census region: Midwest	0.46	0.33
Census region: South	0.32	0.36
Census region: West	0.05	0.03
Owns home	0.41	0.39
Foreign-born	0.07	0.07
Obs.	4,375,940	15,863,272

Notes: This table compares our linked draft cards sample (Black and white men) in the left column to the unmatched Census sample. We link around 20% of the men in our draft registration records.

TABLE 2
Movers Estimates — Log Earnings

	Log Earnings				
	(1)	(2)	(3)	(4)	(5)
Light$\times\hat{\phi}_d$	1.03**	1.01**		0.92***	0.98***
	(0.51)	(0.38)		(0.29)	(0.44)
Light$\times\hat{\phi}_o$			-0.30	-0.23	
			(0.48)	(0.22)	
Controls		✓	✓	✓	✓
1930 Controls					✓
Obs.	7,000	6,850	6,480	6,480	4,360
R^2	0.08	0.11	0.15	0.09	0.08

Notes: Baseline controls include an age quadratic plus origin SEA-by-skin tone and destination SEA fixed effects. Additional controls include education, occupation, and industry fixed effects. 1930 controls include occupation score and an indicator for being literate. Regressions weighted by inverse variance of $\hat{\phi}_d$ in columns 1-2 and 3-4 and $\hat{\phi}_o$ in column 2. $\hat{\phi}_d$ is the residualized light-dark earnings gap in destination d. Log earnings are residualized at the state-level controlling for education, occupation, industry, and metro status fixed effects, then residual earnings gap are estimated in each destination in the non-movers sample.

TABLE 3
Movers Estimates — Pre-move Outcomes

	Years of Schooling	Occupation Score 1930	
	(1)	(2)	(3)
Light$\times\hat{\phi}_d$	2.93	−1.16	−1.18
	(1.86)	(9.56)	(8.70)
Controls			✓
Obs.	3,700	2,600	2,600
R^2	0.15	0.16	0.19

Notes: Baseline controls include an age quadratic plus origin SEA-by-skin tone and destination SEA fixed effects. Column 3 additionally controls for education fixed effects. Sample is restricted to individuals that were at least 20 years old in 1930. Regressions weighted by inverse variance of $\hat{\phi}_d$. $\hat{\phi}_d$ is the residualized light-dark earnings gap in destination d. Log earnings are residualized at the state-level controlling for education, occupation, industry, and metro status fixed effects, then residual earnings gap are estimated in each destination in the non-movers sample.

A. Appendix Tables and Figures

Tables

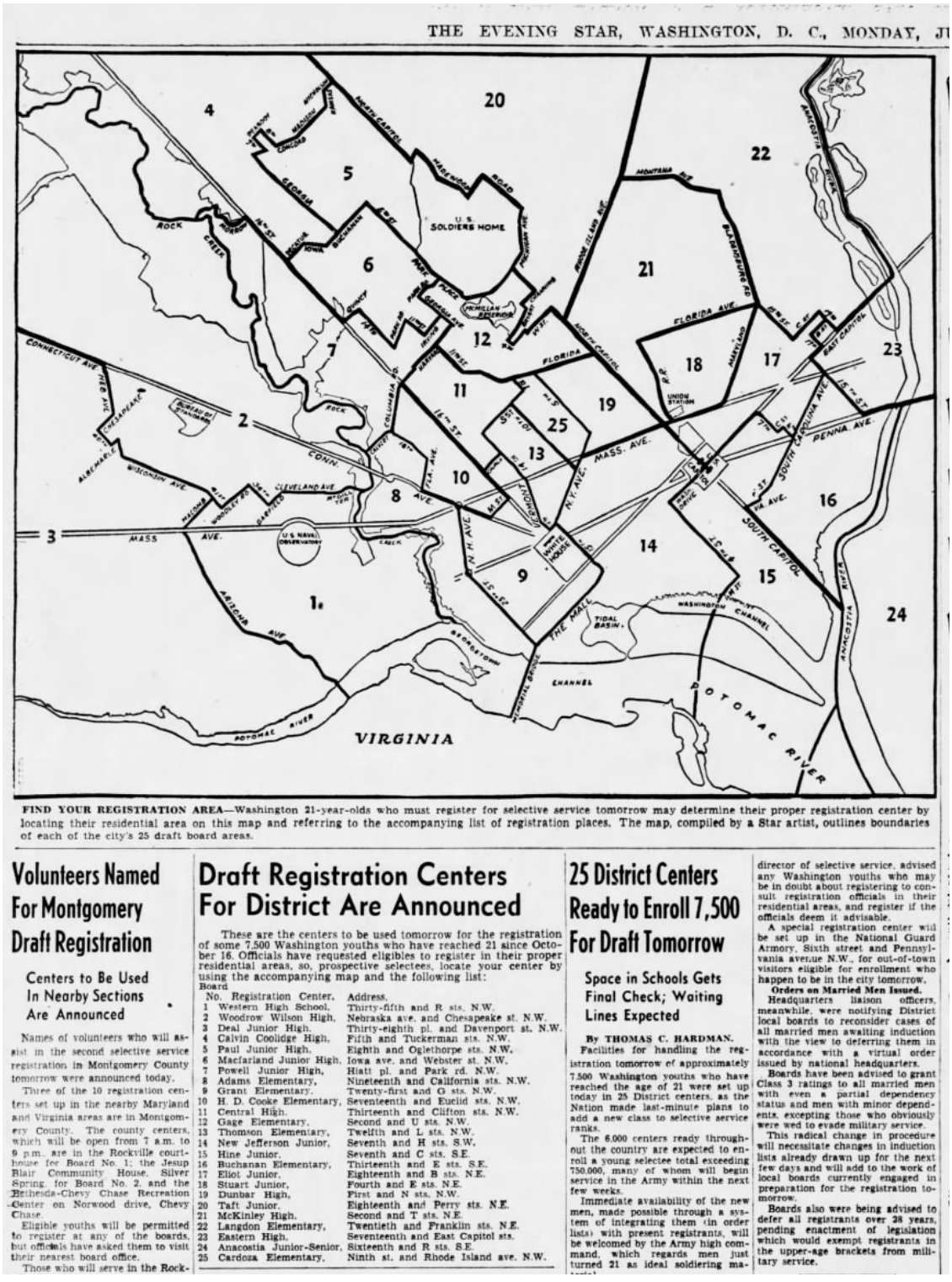
TABLE A.1
Regional Heterogeneity – Extensive Margin Effects

	Lower South		Upper South		North	
	Minimal Controls	Controls	Minimal Controls	Controls	Minimal Controls	Controls
Employed						
	-0.020***	0.0020	-0.012**	0.0070**	0.018***	0.016***
	(0.0020)	(0.0022)	(0.0040)	(0.0033)	(0.0049)	(0.0043)
Dark-skin mean:	[0.90]		[0.84]		[0.75]	
Weeks worked						
	-0.35***	0.17	0.74***	0.58***	2.1***	0.80***
	(0.12)	(0.11)	(0.18)	(0.17)	(0.22)	(0.22)
Dark-skin mean:	[38.77]		[35.69]		[32.31]	
Hours worked per week						
	0.057	0.53***	1.4***	1.1***	3.0***	1.0***
	(0.17)	(0.16)	(0.24)	(0.22)	(0.26)	(0.25)
Dark-skin mean:	[36.00]		[31.81]		[32.31]	
Log weekly earnings						
	0.19***	0.041***	0.17***	0.047***	0.069***	0.036***
	(0.0067)	(0.0056)	(0.0077)	(0.0070)	(0.0063)	(0.0068)
Dark-skin mean:	[1.96]		[2.25]		[2.80]	

Notes: This table presents the extensive margin effects on having light skin relative to dark skin in each of our three regions (see Figure 2 for a description of each region). The "minimal controls" column controls for age group and state fixed effects. The "controls" column additionally controls for education, industry group, occupation group, SEA, and living in a metro area. The point estimates are reported with standard errors in parentheses as well as the mean for Black men with dark-skin for each variable and region in brackets.

Figures

FIGURE A.1
Newspaper Article Describing the Draft Registration Process and Centers



THE EVENING STAR, WASHINGTON, D. C., MONDAY, JU

FIND YOUR REGISTRATION AREA—Washington 21-year-olds who must register for selective service tomorrow may determine their proper registration center by locating their residential area on this map and referring to the accompanying list of registration places. The map, compiled by a Star artist, outlines boundaries of each of the city's 25 draft board areas.

Volunteers Named For Montgomery Draft Registration

Centers to Be Used In Nearby Sections Are Announced

Names of volunteers who will assist in the second selective service registration in Montgomery County tomorrow were announced today.

Three of the 10 registration centers set up in the nearby Maryland and Virginia areas are in Montgomery County. The county centers, which will be open from 7 a.m. to 9 p.m., are in the Rockville courthouse for Board No. 1; the Jesup Blair Community House, Silver Spring, for Board No. 2, and the Bethesda-Chevy Chase Recreation Center on Norwood drive, Chevy Chase.

Eligible youths will be permitted to register at any of the boards, but officials have asked them to visit their nearest board office.

Those who will serve in the Rock-

Draft Registration Centers For District Are Announced

These are the centers to be used tomorrow for the registration of some 7,500 Washington youths who have reached 21 since October 16. Officials have requested eligibles to register in their proper residential areas, so, prospective selectees, locate your center by using the accompanying map and the following list:

Board No.	Registration Center.	Address.
1	Western High School,	Thirty-fifth and R sts. N.W.
2	Woodrow Wilson High,	Nebraska ave. and Chesapeake st. N.W.
3	Deal Junior High,	Thirty-eighth pl. and Davenport st. N.W.
4	Calvin Coolidge High,	Fifth and Tuckerman sts. N.W.
5	Paul Junior High,	Eighth and Oglethorpe sts. N.W.
6	Macfarland Junior High,	Iowa ave. and Webster st. N.W.
7	Powell Junior High,	Hiatt pl. and Park rd. N.W.
8	Adams Elementary,	Nineteenth and California sts. N.W.
9	Grant Elementary,	Twenty-first and G sts. N.W.
10	H. D. Cooke Elementary,	Seventeenth and Euclid sts. N.W.
11	Central High,	Thirteenth and Clifton sts. N.W.
12	Gage Elementary,	Second and U sts. N.W.
13	Thomson Elementary,	Twelfth and L sts. N.W.
14	New Jefferson Junior,	Seventh and H sts. S.W.
15	Hine Junior,	Seventh and C sts. S.E.
16	Buchanan Elementary,	Thirteenth and E sts. S.E.
17	Eliot Junior,	Eighteenth and B sts. N.E.
18	Stuart Junior,	Fourth and E sts. N.E.
19	Dunbar High,	First and N sts. N.W.
20	Taft Junior,	Eighteenth and Perry sts. N.E.
21	McKinley High,	Second and T sts. N.E.
22	Langdon Elementary,	Twentieth and Franklin sts. N.E.
23	Eastern High,	Seventeenth and East Capitol sts.
24	Anacostia Junior-Senior,	Sixteenth and R sts. S.E.
25	Cardoza Elementary,	Ninth st. and Rhode Island ave. N.W.

25 District Centers Ready to Enroll 7,500 For Draft Tomorrow

Space in Schools Gets Final Check; Waiting Lines Expected

By THOMAS C. HARDMAN.

Facilities for handling the registration tomorrow of approximately 7,500 Washington youths who have reached the age of 21 were set up today in 25 District centers, as the Nation made last-minute plans to add a new class to selective service ranks.

The 6,000 centers ready throughout the country are expected to enroll a young selectee total exceeding 750,000, many of whom will begin service in the Army within the next few weeks.

Immediate availability of the new men, made possible through a system of integrating them (in order lists) with present registrants, will be welcomed by the Army high command, which regards men just turned 21 as ideal soldiering ma-

director of selective service, advised any Washington youths who may be in doubt about registering to consult registration officials in their residential areas, and register if the officials deem it advisable.

A special registration center will be set up in the National Guard Armory, Sixth street and Pennsylvania avenue N.W., for out-of-town visitors eligible for enrollment who happen to be in the city tomorrow.

Orders on Married Men Issued.

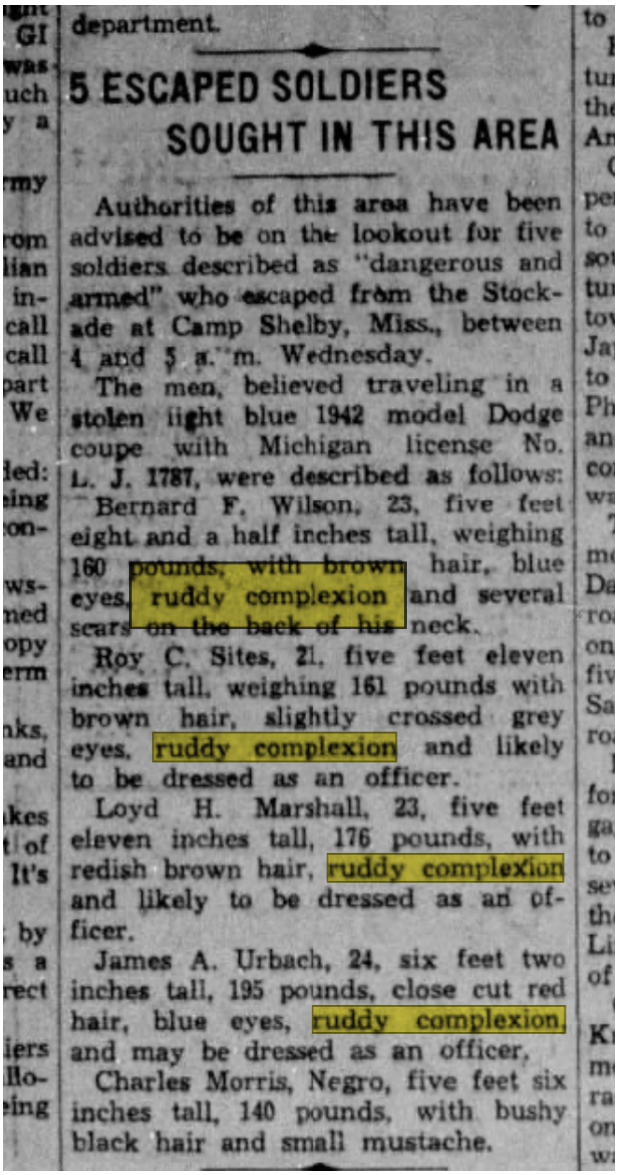
Headquarters liaison officers, meanwhile, were notifying District local boards to reconsider cases of all married men awaiting induction with the view to deferring them in accordance with a virtual order issued by national headquarters.

Boards have been advised to grant Class 3 ratings to all married men with even a partial dependency status and men with minor dependents, excepting those who obviously were wed to evade military service.

This radical change in procedure will necessitate changes in induction lists already drawn up for the next few days and will add to the work of local boards currently engaged in preparation for the registration tomorrow.

Boards also were being advised to defer all registrants over 28 years, pending enactment of legislation which would exempt registrants in the upper-age brackets from military service.

FIGURE A.2
Examples of Newspaper Articles Identifying Individuals with Complexion Descriptions



department.

5 ESCAPED SOLDIERS SOUGHT IN THIS AREA

Authorities of this area have been advised to be on the lookout for five soldiers described as "dangerous and armed" who escaped from the Stockade at Camp Shelby, Miss., between 4 and 5 a. m. Wednesday.

The men, believed traveling in a stolen light blue 1942 model Dodge coupe with Michigan license No. L. J. 1787, were described as follows:

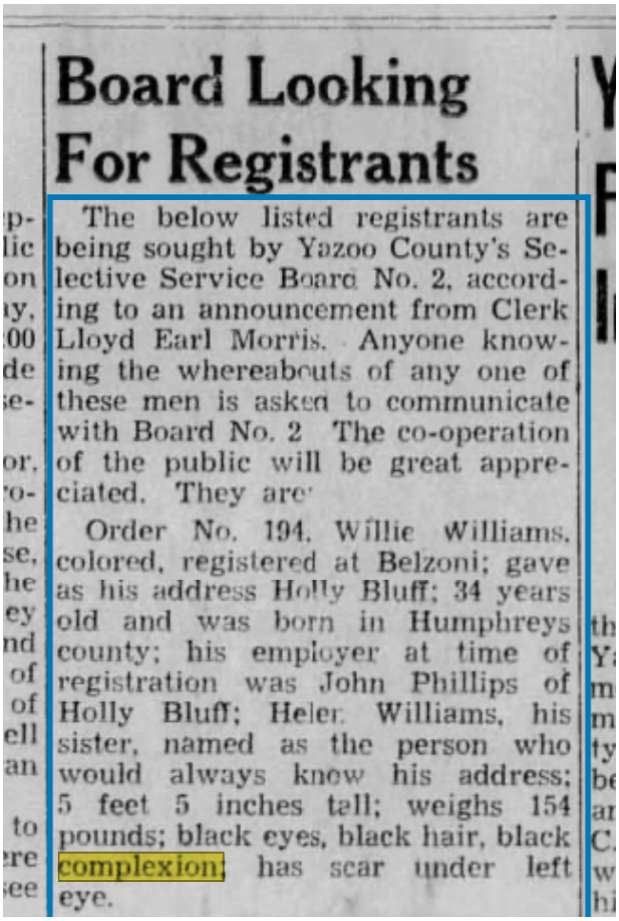
Bernard F. Wilson, 23, five feet eight and a half inches tall, weighing 160 pounds, with brown hair, blue eyes, ruddy complexion and several scars on the back of his neck.

Roy C. Sites, 21, five feet eleven inches tall, weighing 161 pounds with brown hair, slightly crossed grey eyes, ruddy complexion and likely to be dressed as an officer.

Loyd H. Marshall, 23, five feet eleven inches tall, 176 pounds, with redish brown hair, ruddy complexion and likely to be dressed as an officer.

James A. Urbach, 24, six feet two inches tall, 195 pounds, close cut red hair, blue eyes, ruddy complexion, and may be dressed as an officer.

Charles Morris, Negro, five feet six inches tall, 140 pounds, with bushy black hair and small mustache.

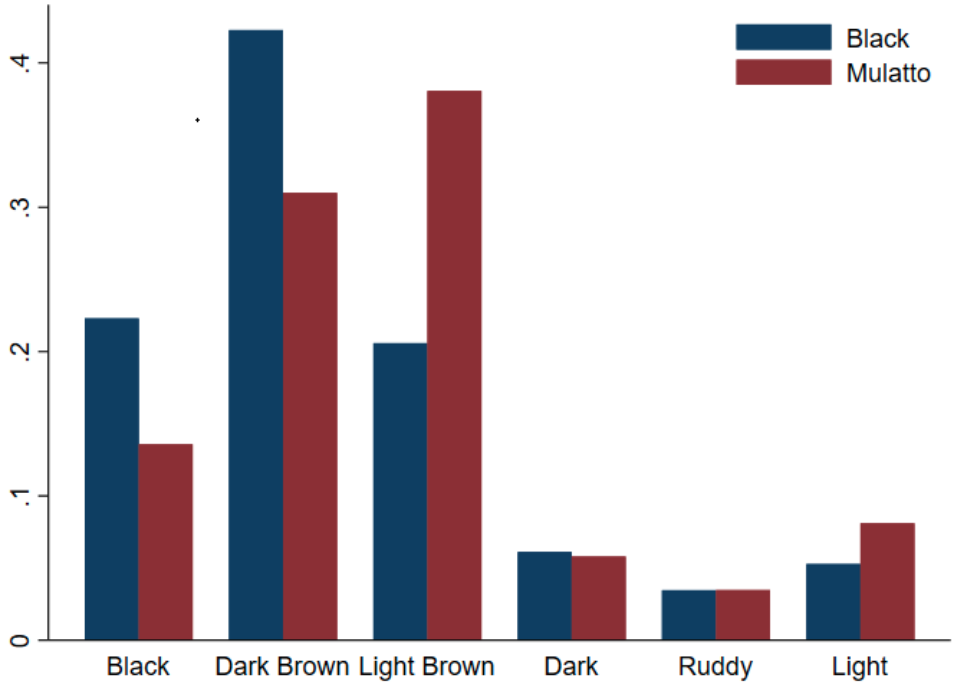


Board Looking For Registrants

The below listed registrants are being sought by Yazoo County's Selective Service Board No. 2, according to an announcement from Clerk Lloyd Earl Morris. Anyone knowing the whereabouts of any one of these men is asked to communicate with Board No. 2 The co-operation of the public will be great appreciated. They are:

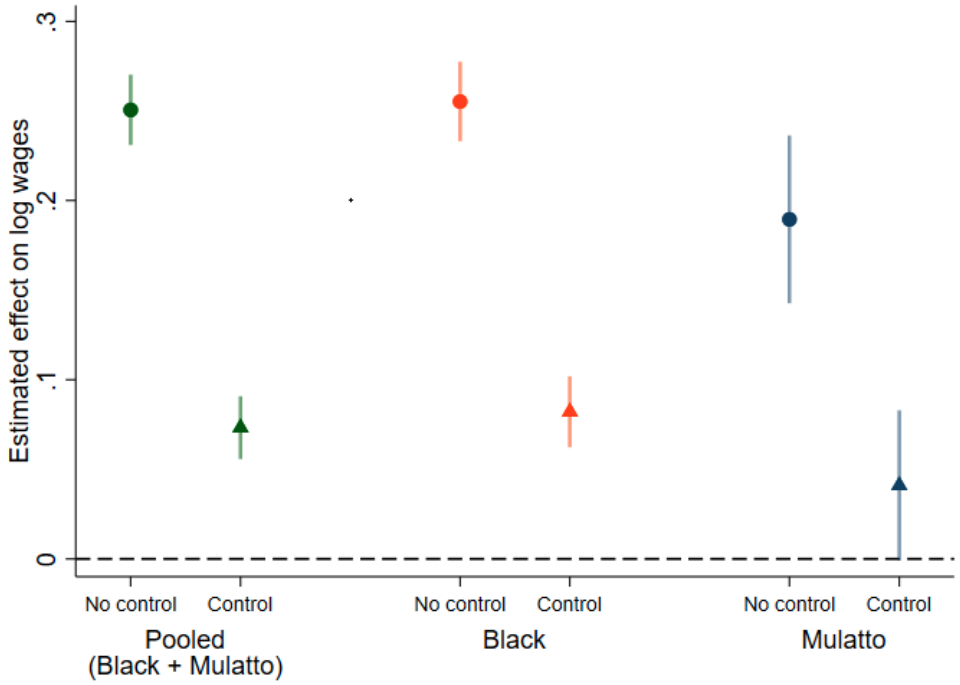
Order No. 194, Willie Williams, colored, registered at Belzoni; gave as his address Holly Bluff; 34 years old and was born in Humphreys county; his employer at time of registration was John Phillips of Holly Bluff; Heler Williams, his sister, named as the person who would always know his address; 5 feet 5 inches tall; weighs 154 pounds; black eyes, black hair, black complexion; has scar under left eye.

FIGURE A.3
Black vs. Mulatto Skin Tone Distribution



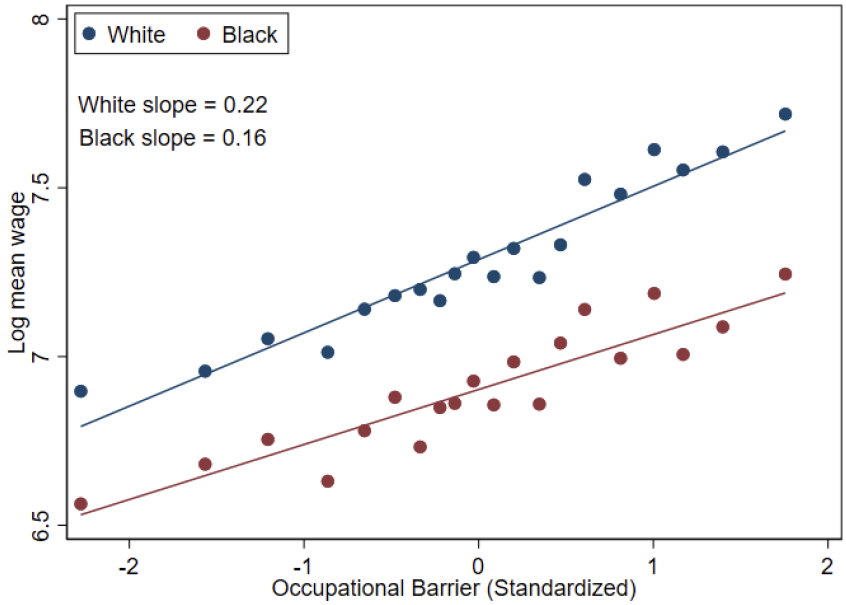
Note: This figure shows the distribution of skin tone categories among individuals racially classified as "Black" and "Mulatto" in the 1920 Census that were also in our analysis sample.

FIGURE A.4
Light–Dark Earnings Gap within Black and Mulatto



Note: This figure displays the estimated light–dark log earnings gaps for individuals classified as "Black" and "Mulatto" in the 1920 Census that were also in our analysis ample. Within both racial classifications, light-skinned individuals earn more than their dark-skinned counterparts.

FIGURE A.5
Relationship Between Occupational Barriers and Salary



Note: This figure presents the relationship between occupational barriers and wages separately by race. Occupation barriers are estimated using the methodology from Hsieh et al. (2019). Each occupation is assigned a barrier measure and an average log wage. The figure displays a binned scatterplot of the occupation log wage on the standardized occupation barrier.

B. Data Appendix

C. Historical Census Racial Classification and Skin Tone Validation

Census race was determined by the enumerators that visited an individuals place of residence until 1960 when the first mail-out Census was used, and individuals could self-report their race. They were instructed to follow the "one drop" rule of the era. The instructions for enumerators from 1930 illustrate the enforcement of the "one drop" rule of the time:

> "A person of mixed white and Negro blood should be returned as a Negro, no matter how small the percentage of Negro blood. Both black and mulatto persons are to be returned as Negroes, without distinction."

From 1850–1920 (except 1900) Census enumerators were also asked to use the 'Mulatto' racial category. During this period, they were asked to determine if individuals also had any possibility of white ancestry as indicated by the enumerator instructions for the 1910 Census:

> "For census purposes the term "black" (B) includes all Negroes of full blood, while the term "mulatto" (Mu) includes all Negroes having some proportion of white blood."

According to Reece (2018), in terms of the 'Mulatto' classification, we know from prior work that generally, enumerators relied on phenotypic markers and local customs, not family history, to decide the category (Gross, 1998; Hochschild and Powell, 2008; Toplin, 1979), yet what is not mentioned is exactly what characteristics and customs were used may have evolved based on the definitions provided by the Census.

Moreover, 'Mulatto' as a racial category is likely to be influenced by the social determinants of race. Therefore, two individuals that appear similar may be classified differently based on their neighborhood, occupation, or income. As evidence of this, we see in Figure A.3 that among individuals in the WWII registration data where we can observe their 1920 Census race, there is substantial variation in the recorded skin tone even within the 'Black' and 'Mulatto' racial categories. This notion is supported by Adukia et al. (2025). They state, "skin tone varies within family, [...] but assigned Census race varies less often within family, which also reflects a social construction of race based on familial relationships." The advantage of using skin color is that it allows us to look at differences within these racial categories and how they evolve. These social determinants of race may also impact how

skin tone is perceived and recorded. However, we argue that in our historical datasets skin tone was specifically recorded as a characteristic to help identify individuals, so making accurate measurements was likely more important than conforming to the racial ideology of the time.

From Figure A.2 we can see that the complexion was used to identify people in newspapers from the time. To try and assess the validity of the skin tone variable in our WWII draft registration data we extract skin tones from color photos for a sample of individuals in the data and compare them to the color palette used in the NLSY97. The process is documented in Figures C.1 to C.4. From Figure C.4 we can see that the extracted skin tones align with the light, medium, and dark categories in the NLSY97 color scale.[33] In the future we can extend this exercise to also see whether socioeconomic characteristics of individuals in 1940 predict their draft recorded complexion conditional on the skin color we extract from their photos. This would let us assess whether two individuals who have the same skin tone in their photos are recorded as lighter or darker in the draft registration records based on their 1940 characteristics.

C.1 Figures

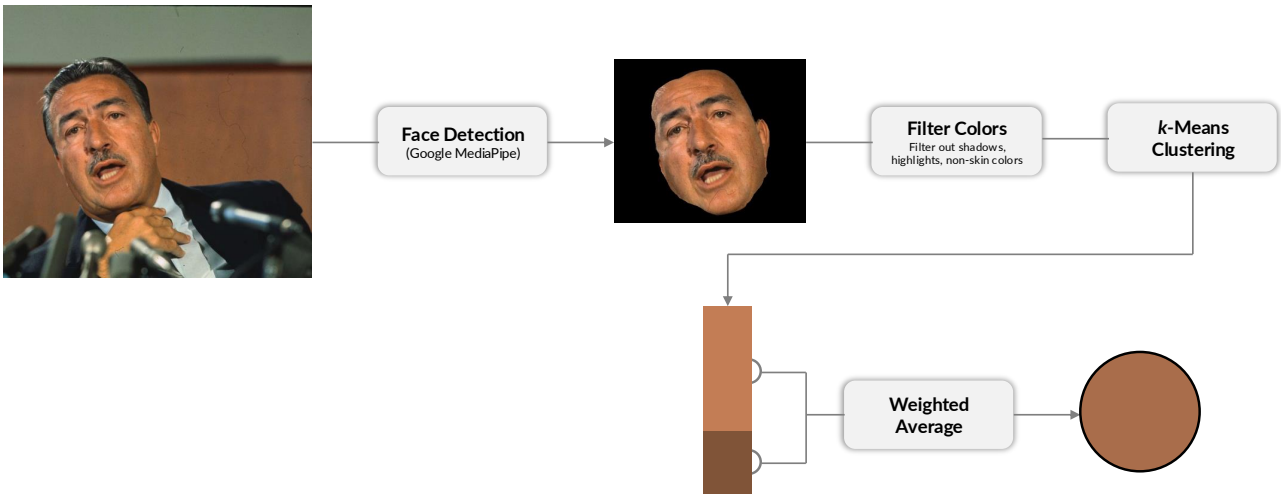
FIGURE C.1
Examples of Skin Tone Variation among Famous Black Men



Note: This figure displays images of prominent Black men that also appear in the draft registration records. Their skin tone category as recorded in the draft registration data is displayed above their image.

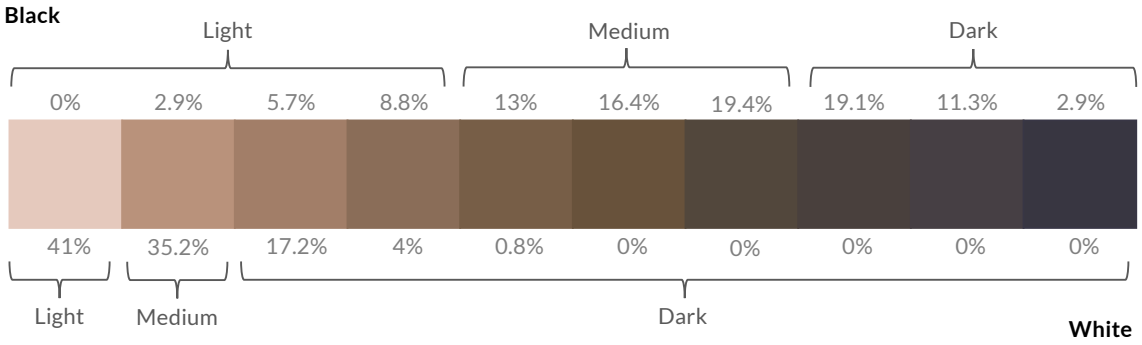
[33] See Figure C.3

FIGURE C.2
Skin Tone Extraction Process



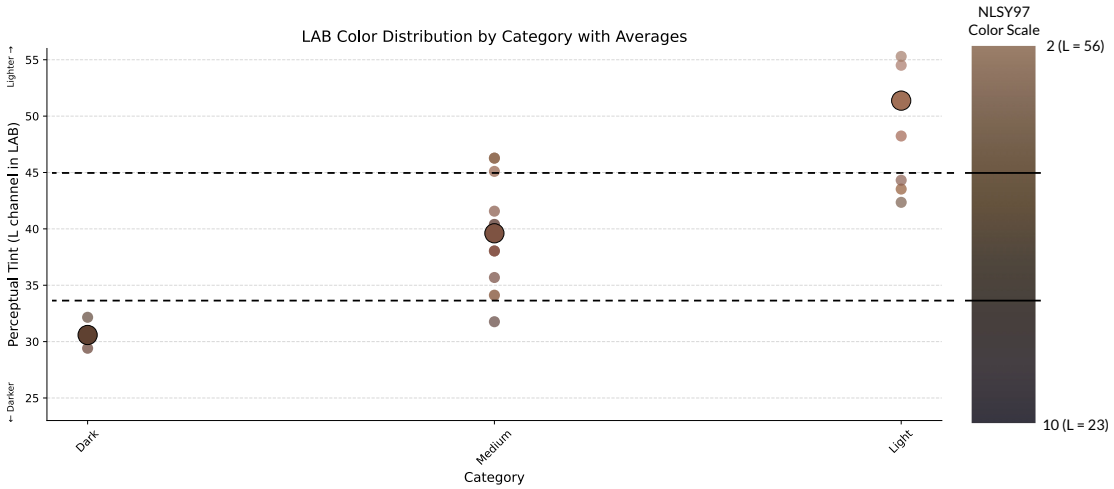
Note: This figure displays the process for extracting skin tone from images that we use in our validation exercise. We follow the methodology described in Adukia et al. (2023).

FIGURE C.3
NLSY97 Color Scale



Note: This figure displays the color scale that enumerators used in the NLSY97.

FIGURE C.4
Skin Tone Photo Validation



Note: This figure displays the results of our skin tone validation exercise. We extract the skin tones for 25 famous Black men that appear in the draft records and that we could find color photos for online. The y-axis displays the perceptual tint (a measure of lightness) for the extracted skin color. The x-axis displays the individual's skin tone category in the draft records. Each opaque point is an individual and the circle outlined in black is the average (in LAB color space) skin tone within each group. The bar on the right of the graph displays the color scale (interpolated) used in the NLSY97 (see Figure C.3). The horizontal dashed lines are the terciles (in LAB space) of this color spectrum.