**Restoring Culture and Capital to Cultural Capital:
Origin–Destination Cultural Distance and Immigrant Earnings in the United States**

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Abstract

An extensive sociological literature maintains that cultural capital plays a pivotal role in perpetuating social inequalities. However, empirical tests of cultural capital theory focus on how culture influences educational outcomes, not earnings, and they mainly look for cultural differences across social classes within societies. We propose a direct test of economic returns to cultural capital by capitalizing instead on differences in national cultures across countries. Using the American Community Survey and the National Survey of College Graduates, we analyze the relationship between immigrants' lack of U.S.-specific cultural capital, proxied by cultural distance between the origin country and the U.S., and their earnings. Findings consistently indicate that origin–U.S. cultural distance is linked to immigrants' lower earnings after controlling for various other factors, supporting cultural capital theory. The earnings penalties vary systematically across cultural distances, and such systematic variations are more pronounced for immigrants with at least a bachelor's degree, those who arrive in adulthood, and with foreign highest degrees. Moreover, county-level analysis reveals more sizeable cultural distance penalties in more competitive and unequal labor markets, highlighting how subnational receiving contexts shape disparities in immigrants' economic incorporation at their destinations.

Keywords: Cultural Capital; Immigrant Economic Incorporation; Returns to Education; Place of Education; Contexts of Reception.

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Introduction

Since the seminal work of Pierre Bourdieu (1984 [1979]), sociologists have sought to understand how differences in “cultural capital” shape social inequalities. Empirical research from the cultural capital perspective has shown that cultural capital delineates social classes and facilitates intergenerational transmission of class privileges to children (DiMaggio 1982; Farkas et al. 1990; de Graaf, de Graaf, and Kraaycamp 2000; Lareau 2011, 2015; Leopold and Shavit 2013; Calarco 2014; Jæger and Breen 2016). This literature focuses mostly on educational achievements and attainments as outcomes, leaving open the question: does cultural capital yield *income* advantages net of education? This question is vital to the very meaning of cultural capital as a form of “capital,” which implies that cultural *capital* should yield economic returns just as financial and social capital do. Absent confirmation that cultural capital increases monetary rewards in labor markets, the validation of the “cultural capital” concept remains elusive.

In this study we reconceptualize and validate the longstanding conjecture of cultural capital theory with a new test based on the earnings of immigrants to the United States. If cultural capital indeed yields economic returns, immigrants from countries whose cultures differ more from mainstream American culture should earn less than immigrants from countries whose cultures more closely resemble American culture, other things being equal. Apart from extending and testing the cultural capital perspective, we contribute to three other strands of literature. First, organizational case studies demonstrate that cultural similarity between employees and employers boosts elite organizational careers by helping individuals get hired, obtain better performance assessments, and avoid involuntary job exits (Rivera 2012; Goldberg et al. 2016).

However, these studies do not address whether such cultural similarity predicts higher earnings across diverse employment contexts on the national level labor market (Rivera 2020). Second, prior research has documented that foreign-educated immigrants disproportionately face economic disadvantages relative to native-born peers in the U.S. (Zeng and Xie 2004; Chiswick and Miller 2009; Tong 2010; Arbeit and Warren 2013; Damelang, Ebensperger, and Stumpf 2020; Lu and Li 2021), yet few studies have examined what drives economic disparities *among* immigrants from diverse national origins. Third, immigration scholars often suggest examining how local contexts of reception affect immigrants' economic adaptation (Portes and Zhou 1993; Marrow 2005; Portes and Rumbaut 2014; Restifo, Roscigno, and Qian 2013), but quantitative research on local receiving contexts remains limited (Ellis and Almgren 2009; Lara-García 2021).

We quantify cultural distances between immigrants' origin countries and the U.S., averaging across four measures of workplace-relevant cultural dimensions previously developed by cross-cultural psychologists and organizational scholars (Hofstede 1984; Hofstede, Hofstede, and Minkov 2005). To assess whether and how origin–U.S. cultural distance penalizes their earnings in broader U.S. labor markets, we analyze the immigrant subsample in the American Community Survey (ACS 2014–19) and the National Survey of College Graduates (NSCG 2019). Our results show that immigrants originating from countries that are culturally closer to the U.S. earn higher overall incomes and greater income returns to education than peers from culturally distant countries, net of a host of covariate controls. Furthermore, earnings penalties for cultural distance are more pronounced for immigrants holding a bachelor's degree or above, arriving in adulthood, and with foreign highest degrees, highlighting the often-overlooked unevenness of discounts for foreign educational credentials in U.S. labor markets across source

countries. Moreover, we find that an American undergraduate education effectively shields immigrants from such penalties. Finally, our contextual analysis demonstrates that cultural distance penalties among immigrants are greater in more competitive and more unequal county-level labor markets. Altogether, the theorized role of culture as capital is confirmed, but it varies in magnitude depending on other individual-level and contextual characteristics.

Cultural Capital and Social Inequalities

First coined by Pierre Bourdieu (1974 [1966]) and later elaborated in a series of subsequent works (e.g., Bourdieu and Passeron (1977 [1970]); Bourdieu 1984 [1979], 1986 [1977]), the term “cultural capital” refers to one’s familiarity with, or command of, the representative culture of the dominant classes in a society. Bourdieu (1986 [1977]) distinguished three broad forms of cultural capital: *objectified* (material objects that are possessed or consumed, such as books, musical instruments, or imported organic foods), *embodied* (durable internalized dispositions, knowledge, and attitudes, such as “fine” taste, confidence, knowledge about how to behave “properly” in various social situations), and *institutionalized* (formal educational or professional credentials). Inherent in the very concept of cultural capital is its convertibility into economic capital (as with human capital and social capital), and its convertibility from the embodied/objectified form into the institutionalized form. Cultural capital is “convertible, in certain conditions, into economic capital and may be institutionalized in the form of educational qualifications” (Bourdieu 1986 [1979]:243). A key implication of this initial conceptualization is that relatively exclusive control over such resources helps elite classes preserve their standing and privileges and pass them on to their offspring. As Lamont and Lareau (1988:156) keenly observed in their agenda-setting review, institutionalized and high-status cultural signals serve as

gatekeeping devices to exclude individuals lacking such capital from elite jobs, resources, and high-status positions.

However, rather than address whether cultural capital can indeed be converted into economic capital, empirical sociological research inspired by cultural capital theory has overwhelmingly focused on how, in Bourdieu's terminology, objectified and embodied forms of cultural capital assist in materializing its institutionalized form: that is, how dominant class culture helps reproduce the class structure via educational credentials. Quantitative studies use proxies for dominant-class cultural investments and consumption, such as parenting behaviors, the number of books at home, reading habits, participation in cultural activities, and family social background (Chan and Goldthorpe 2007; Jæger and Breen 2016), to predict academic performance, educational attainment, and (less commonly) entry into elite occupations (DiMaggio 1982; DiMaggio and Mohr 1985; Farkas et al. 1990; Egerton 1997; de Graaf, de Graaf, and Kraaycamp 2000; Lareau 2011; Gaddis 2013; Leopold and Shavit 2013).

Ethnographic work has provided finer-grained accounts of how upper- and middle-class parents teach their children specific dispositions and behaviors that are rewarded by schools, including self-confidence, a sense of entitlement, self-advocacy skills, and displays of familiarity with high-brow culture, to help them obtain better grades and evaluations from teachers (Lareau 2011; Calarco 2014). In contrast, working- and lower-class parents are less likely to teach their children these skills. Although the cultural capital paradigm has produced rich insights into how dominant classes use cultural transmissions to reproduce privileged class positions for their offspring, the narrow focus on education (or, in some cases, occupational prestige) as the outcome leaves unaddressed Bourdieu's original theoretical conjecture that cultural capital is truly a type of *capital*, a defining feature of which is its convertibility into direct economic returns. To make a

stronger case for cultural capital as a type of *capital*, however, we need direct empirical evidence for earnings returns to cultural capital *net of education*.

A separate yet related body of empirical research has examined the labor market returns to certain behavioral and attitudinal traits labelled as “non-cognitive skills.” These traits include career ambition, the ability to perform job duties conscientiously, the “Big Five” personality traits in general, the attribution of successes or failures to internal versus external factors (i.e., “locus of control”), respect for authority (in low-skill jobs), and (in high-skill jobs) capacity for initiative and risk (Heckman and Rubinstein 2001; Bowles and Gintis 2002; Farkas 2003; Hall and Farkas 2011). This literature provides ample evidence that U.S. employers value various non-cognitive skills as much as, or even more than, specific cognitive abilities when making hiring and promotion decisions. Some view these skills as related to actual productivity (Heckman and Rubinstein 2001), but that is not essential for our purposes: the key is that employers perceive some personality traits or habits as more desirable and reward them accordingly.

Are economic returns to non-cognitive skills evidence that cultural capital is indeed a form of capital (not just a facilitator for educational attainment)? Not necessarily, because the non-cognitive skills literature does not directly tie such skills to *culture*. Individuals do vary in non-cognitive skills partly due to transmission from parents, but individual-level personality differences or idiosyncrasies may not be *cultural* in nature. To us, cultural characteristics should be demonstrably inculcated via processes of transmission that take place at a higher level of aggregation than individuals or families (for example, at the country level). Absent a clear conceptual and empirical linkage of non-cognitive skills to culture, their role in yielding higher incomes is not tantamount to evidence of cultural capital as a form of capital.

We find promise for restoring *culture* to the concept of cultural capital in the fact that countries vary in prevailing norms, attitudes, and behaviors. Drawing on surveys of over 88,000 employees of IBM and its subsidiaries in 72 countries, Hofstede and his associates (1984; Hofstede, Hofstede, and Minkov 2005) identified and quantified four cultural dimensions that are key to employment relations and that vary systemically across countries. These pertain to relationships with authority, relationships with affiliated groups, gender norms, and uncertainty avoidance. Cultural psychologists (Nisbett and Masuda 2003; Varnum et al. 2010) have also established that “social patterns prevalent in a culture reinforce particular ways of thinking” (de Oliveira and Nisbett 2017:785). The distinct cognitive tendencies rooted in national cultures might, in turn, function as cultural resources for or barriers to horizontal ties among peers and hierarchical bonds between supervisors and subordinates in work settings (Collins 2019:79).

Prior research based on case studies of organizations or industries suggests that cultural fit of employees with employers is rewarded, on average. Rivera’s (2012) qualitative study showed that job candidates sharing more cultural traits with prospective elite employers had a greater chance of being hired, demonstrating culture-based social exclusion in action (see also Lamont and Lareau 1988). Analyzing language use in intra-firm email exchanges, Goldberg et al. (2016) found that workers who “fit in” culturally had lower rates of involuntary job exit and received better performance assessments from employers. Employers may view cultural similarity as a heuristic to infer unobserved qualities indicative of future job performance (Cornell and Welch 1996).¹ These studies lead us to ask whether cultural similarity also renders advantages in *earnings*, for which there exists little empirical evidence (Rivera 2020). Moreover,

¹ A related body of literature in business studies shows that cultural distance between countries affects corporate decision-making about whether to integrate foreign entities or form joint ventures, with the former more likely for expansion into more culturally similar countries, because cultural similarity lowers the economic uncertainties associated with integration (see Kogut and Singh 1988).

it remains unclear whether findings derived from industry- or company-specific case studies still hold true on the national-level labor market, and how results might differ across various employment contexts beyond elite organizations.

In sum, organizational research suggests that cultural similarity with employers might also give employees an edge in earnings. Unlike domestic workers – who share the same national culture as domestic employers – immigrant workers, by the very fact of originating from a foreign country, potentially differ in cultural orientations from U.S.-born employers, colleagues, and clients. Moreover, crucially, these differences vary systematically by national origins, at least with respect to the cultural dimensions fundamental to workplace settings that Hofstede and colleagues have quantified. Thus, immigrant workers from different origin countries are uniquely suited for the analysis of whether differences in national culture affect earnings in the way that cultural capital theory would predict at the level of the entire U.S. labor market, as opposed to within a single firm or industry. Accordingly, we can validate cultural capital theory by restoring both culture and capital to the concept and determining whether the cultural distance between an immigrant's origin country and the U.S. undermines post-migration earnings, net of other covariates.

Differences in Earnings among Immigrants: A Role for Cultural Distance?

For decades, the U.S. has been the world's top destination country for new immigrants (International Organization for Migration 2020). Upon immigration, foreign-educated immigrants experience economic disadvantages, such as lower earnings and underemployment, relative to native-born peers in the U.S., and those disadvantages are especially pronounced among those with college degrees (Zeng and Xie 2004; Chiswick and Miller 2009; Tong 2010; Arbeit and Warren 2013; Damelang, Ebensperger, and Stumpf 2020; Lu and Li 2021). Much less

research examines disparities in labor market outcomes *among* immigrants from different national origins. In contrast to several analyses of European countries (Friedberg 2000; Kanas and van Tubergen 2009; Lancee and Bol 2017), studies of immigration penalties in the U.S. typically lump all immigrants or all foreign-educated individuals together. Instead of comparing immigrants against native-born individuals, we focus on variations in economic outcomes *across* different immigrant national-origin groups, because cultural capital theory implies that the earnings penalties borne by immigrants vary systematically across cultural distances between origin countries and the U.S.

A related argument involving culture centers on linguistic similarity: familiarity with the language(s) of immigrant destinations makes immigrants' educational degrees or employable skills acquired abroad more transferable to destination societies. Because different origin countries equip immigrants with varying levels of proficiency in destination-country languages, immigrants' labor market outcomes differ by origin countries. High English-language proficiency partly offsets the foreign-credential disadvantage (Akresh 2007), and for immigrants whose mother tongue is not English, smaller linguistic distances from English are associated with higher initial earnings upon arrival (Chiswick and Miller 2005, 2012).

We view linguistic similarity as one, but not the only, aspect of cultural traits relevant for immigrants' labor market outcomes. We recognize that immigrants from a given country may self-select on non-conformity to their origin-country cultures (that is, contrasts between their personal values and those constituting the societal norms may motivate some to emigrate in the first place), but such variations do not completely offset overall cultural differences across origin countries (Polavieja 2015; He and Gerber 2020). The cultural capital perspective predicts that immigrants from countries sharing cultural norms with their destination country should generally

exhibit cultural traits valued by destination labor markets, compared to peers from more culturally distant ones. Cultural similarity should facilitate communication at the workplace, alignment of worker and employer goals, formation of trust, and “internalization” of employer expectations by employees, independent of immigrants’ levels of English language proficiency.

Cultural factors could affect immigrants’ economic outcomes for reasons unrelated to productivity. Destination employers may be more likely to engage in statistical discrimination against immigrants from culturally distant countries compared to peers from culturally similar ones (Portes and Rumbaut 2014). Therefore, *ceteris paribus*, employers prefer hiring and offering higher salaries to workers whom they perceive as more culturally predictable and congenial, when choosing among alternative candidates with comparable formal credentials and other characteristics. In light of cultural capital theory, we first hypothesize that, assuming employers reward cultural “fit” as a form of capital, *earnings among U.S. immigrants vary systematically by national origin in inverse relation to origin–U.S. cultural distance (Hypothesis 1).*

Moderating Effects of Age at Immigration, Level and Place of Education, and Labor Market Competitiveness

From the theoretical logic underlying the main hypothesis, we generate five more hypotheses pertaining to heterogeneities in the cultural distance earnings penalty. First, past research suggests that foreign-educated immigrants receive lower income returns to educational credentials and have higher probabilities of being over-educated for jobs than domestically educated foreign-born or native-born counterparts (Zeng and Xie 2004; Tong 2010; Arbeit and Warren 2013; Lancee and Bol 2017; Damelang, Ebersperger, and Stumpf 2020). A noteworthy feature of contemporary U.S. immigration is educational polarization – immigrants are overrepresented among both the highest and the lowest education levels, compared to native-

born U.S. workers (Hunt 2017). The immigrant wage penalty is more substantial for highly educated immigrants holding foreign degrees (Lu and Hou 2020; Lu and Li 2021). Lack of knowledge about the quality of foreign educational credentials adds weight to cultural signals in employer evaluations of foreign tertiary educational credentials (Buzdugan and Halli 2009).

Viewing earlier findings through the prism of our reasoning regarding cultural distance, we conjecture that the extent to which U.S. employers devalue formal credentials and skills obtained abroad (due to limited transferability of cultural capital from origin countries to the U.S.) should vary positively with immigrants' educational level. The higher the educational level of an immigrant, the greater the "foreign discount" associated with cultural distance from the U.S. In accordance with this, we derive our second hypothesis: *The earnings penalty of origin–U.S. cultural distance is stronger for more educated immigrants than for less educated immigrants (Hypothesis 2).*

Furthermore, an individual's cultural configuration is not fixed at birth, but can change with subsequent life experiences. Generally speaking, the longer and more consistently one is exposed to a national culture, the more one will assimilate to that culture. We approximate immigrants' adherence to origin-country cultures with broadly categorized age at immigration. People who immigrate as children have less exposure to their origin-country culture and can assimilate to their destination culture more easily than adulthood immigrants, because childhood and adolescence are formative periods for inculcating cultural beliefs (Cheung, Chudek, and Heine 2010; Blakemore and Mills 2014), and because attending U.S. schools provides intense exposure to destination-country culture. As such, we derive the following hypothesis: *The earnings penalty for origin–U.S. cultural distance is greater for immigrants who immigrated to the U.S. during adulthood than for those who did so during childhood (Hypothesis 3).*

Regardless of immigrants' actual exposure to their origin culture, obtaining an educational degree from a U.S. institution may be viewed as evidence of adaptation to U.S. culture, weakening the signal of foreign educational credentials. With limited information on individuals' life history, we utilize the level and place of an immigrant's highest educational degree as a proxy for cultural signals available to prospective destination employers. Thus, *completion of one's highest degree from a U.S. educational institution weakens the earnings penalty of origin–U.S. cultural distance (Hypothesis 4).*

Finally, inspired by work showing that the experiences of U.S. immigrants vary across local contexts of reception (Alba and Nee 2009; Restifo, Roscigno, and Qian 2013; Portes and Rumbaut 2014), we consider how characteristics of regional labor markets can moderate the cultural distance earnings penalty. Available data support treating counties as geographic proxies for regional labor markets. First, our theoretical reasoning predicts that employers will weigh cultural capital more heavily when screening and remunerating prospective/existing employees in more competitive labor markets than in less competitive labor markets. The greater the local supply of highly educated job candidates relative to job vacancies, the more leeway employers have to discriminate against immigrant workers based on national origins. Similarly, net of the supply of highly educated, the greater the local demands for them, the less intense job market competition among local workers, including immigrants. Generally speaking, *county-level labor market competitiveness is positively associated with the magnitude of the cultural distance penalty (Hypothesis 5).* Besides local labor supply and demand, county-level earnings dispersion provides an alternative proxy that captures regional labor market competitiveness and potentially correlates with supply- and demand-side measures. Second, in more unequal regional labor markets of more sizeable earnings dispersion, origin-U.S. cultural distance should have greater

penalizing effects on earnings. Therefore, *county-level earnings dispersion is positively associated with the magnitude of the cultural distance penalty (Hypothesis 6).*

Data and Methods

Main Datasets

Our primary data come from the pooled 2014–2019 annual files of the American Community Survey (ACS), which is administered to a random 1% sample of the U.S. general population each year (Ruggles et al. 2021). We analyze the earnings of noninstitutionalized foreign-born individuals of prime working age (18–50 years old) who reported some form of employment during the 12-month period leading up to the survey date. We exclude respondents who were attending school full time or who gave birth during the prior 12 months, because their earnings are likely to have been strongly affected by these activities.

The ACS better aligns with our research goals than other large-scale national surveys because it contains a large, nationally representative sample of immigrant workers, provides detailed information on origin country, earnings, and a host of other variables that may affect earnings and be associated with origin country, and has been used in previous analyses of immigrant employment. However, it does not provide data on where respondents received their highest educational degrees, which we need to test Hypothesis 4. Therefore, we supplement the ACS dataset with the 2019 wave of the National Survey of College Graduates (NSCG 2019). The NSCG sample was drawn from the college-educated segment of the ACS sample, with extra information on the country where the respondents obtained their highest degree.

Variables and Measures

Earnings. Our dependent variable throughout this analysis is annual earnings, inflation adjusted, bottom-coded at 1, and logged.²

Cultural Distance. We derive our core independent variable, the cultural distance of immigrants' origin country from the U.S., using a refined version (Hofstede, Hofstede, and Minkov 2005) of Hofstede's (1980) original index. We aggregate across four fundamental cultural dimensions for which data are available for a wide range of countries: (1) the power distance index (indicating relationship with authority); (2) the individualism index (indicating one's relationship with groups); (3) the masculinity index (indicating gender norms); and (4) the uncertainty avoidance index (indicating risk tolerance).³ We define cultural distance (CD) as the Euclidean distance between the four-dimensional culture of an origin country and that of the U.S. To illustrate: in the four-dimensional culture space, CD symbolizes the shortest line length between the two points representing the national culture of an origin country and that of the U.S., respectively. Mathematically, the following equation is used to calculate CD:

$$CD(O, U) = \sqrt{\sum_{i=1}^4 (O_i - U_i)^2} \quad ,$$

where O and U denote the two points, in the four-dimensional Euclidean space, respectively representing an immigrant's origin country (O) and the U.S. (U). O_i refers to the index of the i_{th}

² ACS respondents with negative or zero earned income in the surveyed year accounted for only 0.06 percent of the overall analytic sample; excluding these individuals does not alter our results.

³ Similarities on each of these dimensions have intuitive implications for workplace relations. We would expect more conflict, friction, and misunderstanding between workers and employers when they disagree on the importance of obeying authority, the priority of individuals vs. the collective, the privileging of traditional masculinity versus gender egalitarianism, and the desirability of taking risks. We take no position on whether higher or lower values on any scale directly affect workplace relations; instead, we emphasize how *similarity* among workers and managers on each of them should, on average, lead to more harmonious workplaces, or at least be perceived as doing so by employers.

aforementioned cultural dimension for the origin country, whereas U_i captures the corresponding index for the U.S. For ease of interpretation, we standardize CD to have a mean of 0 and a standard deviation of 1, yielding the Standardized Cultural Distance (SCD) between each origin country represented in the data and the U.S.⁴

Highest Educational Attainment. For the ACS, we code individuals' highest education into four categories: less than high school, high school diploma, some college, and bachelor's degree or above (denoted by "BA (+)" hereafter). Given the NSCG's exclusive sampling of highly educated persons, we categorize the respondents' education into four categories: non-U.S. bachelor's degree, U.S. bachelor's degree, non-U.S. graduate degree, and U.S. graduate degree.

County-Level Job Market Contexts. We capitalize on the county-level geocodes and individuals' main occupations in the entire ACS sample (including both immigrant and native-born workers) to derive measures of county-level labor market competitiveness and county-level wage dispersion. To measure labor market competitiveness, we must take into account both the supply-side and the demand-side factors. *Net of supply*, greater labor demand entails less competition among workers, and *net of demand*, a greater labor supply means more competition. But neither labor supply nor labor demand can be interpreted as such without controlling for both simultaneously: because labor is at least partially mobile and supply can respond to demand, so labor supply and demand are likely to be positively correlated at any geographic unit of analysis. What matters for labor market competition is supply *relative to* demand, so both must be included.

⁴ We excluded from this analysis immigrants from member states of the former Soviet Union because the ACS did not further distinguish the individual countries, such as Russia, Estonia, Armenia, and Tajikistan. The ACS also lumped "North Korea" and "South Korea" into a single region called "Korea," and we used the Hofstede indices for "South Korea" to represent this region, on the assumption that most Korean immigrants in the U.S. are from South Korea.

Our measurement strategy focuses on the supply of and demand for university-educated workers, because greater competition among the university educated both drives down wages of the highly educated and also pushes them down the occupational distribution and puts them in competition with less educated workers for less remunerative jobs. That is, labor market competition tends to “trickle down” the earnings distribution rather than moving upward (increased competition among low skilled workers for low skilled jobs does not push them into competition with high skilled workers for high skilled jobs). Moreover, it is easier to derive a measure of the demand for highly educated workers than for, say, high school graduates. Also, our theoretical expectations anticipate the cultural distance penalty will be greatest among the most educated immigrants, so it makes sense to focus on competition for highly educated workers for our county-level measure.

We use the percentage of working-age residents in a county with at least a bachelor’s degree to measure the supply of highly educated workers. To measure county-level demand for highly educated workers, we first match scores pertaining to education requirements from the O*NET (National Center for O*NET Development 2022) database on occupational characteristics to the 6-digit SOC occupation codes reported by currently employed respondents (immigrant and native) in the pooled 2010–2019 ACS sample. The O*NET database assigns education values of “1,” “2,” “3,” or “4,” corresponding to occupations requiring “little or no preparation,” “some preparation,” “medium preparation,” and “considerable or extensive preparation,” respectively. We then calculate the average score across the entire observed occupational mix (from the ACS) within each county, yielding a reasonable proxy for the demand for highly educated workers by employers in that county, measured independently of the

supply-side measure. In effect, we use O*NET to derive an “occupational education” (Hauser and Warren 1997) for each occupation and then average that measure within each county.

By including interactions of cultural distance with the county-level measures of the supply of and demand for highly educated labor simultaneously, we can safely interpret both interactions as alternative indicators of how more competitive destination labor markets moderate the cultural distance penalty (Hypothesis 5). Our contextual analysis additionally controls for local earnings inequality, which might also correlate with our supply- and demand-side competition measures, operationalized by the county-level normalized standard deviation of earnings for local employed persons,⁵ derived from the pooled 2010–2019 ACS. To test Hypothesis 6, we also interact cultural distance with county-level earnings inequality.

Individual-Level Controls. We control for a host of individual-level covariates potentially associated with SCD, education, and earnings. Consistent with previous studies, we code immigrants’ English-language proficiency using a dummy variable indicating whether or not they speak English well. We include dummy variables denoting immigrants’ racial and ethnic groups: “Non-Hispanic White,” “Non-Hispanic Black,” “Hispanic,” “Non-Hispanic Asian,” and a residual category (“Other Non-Hispanic”). We adjust for a standard set of individuals’ demographic characteristics, such as gender, marital status, age, and age squared. Potential assimilation effects are accounted for by controlling for years spent in the U.S. (along with its quadratic form) and citizenship status. State- and year-fixed effects are included to remove

⁵ We normalized the county-level standard deviation of earnings using the contemporaneous nationwide standard deviation of earnings as the base, generating the normalized standard deviation of individual earnings within the local county (ranged 0~1).

confounding by time-invariant effects of location and location-invariant effects of time.⁶ We control for labor input by the number of weeks worked in the preceding year.⁷

Origin-Country-Level Controls. Lastly, all our models control for origin-country GDP per capita to purge potential confounding effects from the sending country's level of socioeconomic development. Aside from immigrants' individual-level English proficiency, we also include an origin-country-level dummy variable indicating whether English is an official language, to take into account shared linguistic traditions between the origin countries and the U.S. These controls heighten our confidence that it is origin–U.S. cultural distance, not confounding origin-country characteristics, that drives the earnings penalty associated with cultural distance.

Analytic Strategy

We first present descriptive evidence for the zero-order bivariate relationship between cultural distance and average immigrant earnings by the sending country. For individual-level analysis, we estimate regression models with year- and state-fixed effects using the pooled 2014–2019 ACS sample, separately for childhood immigrants (immigrated before age 18) and adulthood immigrants (immigrated at age 18 or older). We then incorporate interaction terms between education level and SCD to test Hypothesis 2 and compare the effects of SCD on earnings for childhood and adulthood immigrants to test Hypothesis 3. Next, we estimate earnings models using the NSCG data to test for varying effects of cultural distance by level and place of highest degree (Hypothesis 4). Because the NSCG dataset does not reveal individuals' age at immigration, we stratify this replication analysis by place of high school completion (U.S. versus

⁶ We tried additionally controlling for industries but the results did not change substantively, so we omit them.

⁷ Sensitivity analysis showed that further controlling for “usual hours worked per week” did not affect the results much, so we omit it.

abroad) to approximately replicate the age-stratified analysis in the ACS. Finally, we assess systematic heterogeneity in the effect of cultural distance on earnings across labor market contexts (Hypotheses 5 and 6).

Results

Aggregate-Level Evidence

Figure 1 plots an initial assessment for the postulated relationship between cultural distance and immigrant earnings across origin countries. Using the ACS sample, we plot the Locally Weighted Scatterplot Smoothing (LOWESS) curve to illustrate the zero-order relationship between a country's SCD and the average annual earnings of immigrants from that country (with 95-percent confidence intervals). This figure reveals an inverse bivariate relationship between origin-country SCD and average earnings of immigrants from that origin, offering preliminary evidence in support of Hypothesis 1.⁸ We next examine whether a similar pattern persists at the individual level after adjusting for potential individual-level and origin-country-level confounders.⁹

[Figure 1 about here]

Earnings Penalties by Educational Level and Age at Immigration

Table 1 presents the results from models predicting logged earnings using SCD, other covariates, and state- and year-fixed effects. We estimate the models separately for adulthood and childhood immigrants. The baseline models (1a and 1b), include all covariates but no interaction terms.

Consistent with Hypothesis 1, the baseline results indicate statistically significant SCD earnings

⁸ We also report the origin-country-level raw cultural distances from the U.S. (see Figure A1) and the origin-country-level bivariate relationships between average immigrant annual earnings and raw cultural distances across those four cultural dimensions (see Figure A2).

⁹ For a full descriptive summary of all the covariates involved, please refer to Table A1.

penalties. As Hypothesis 3 predicts, this relationship is much stronger for adulthood immigrants than for childhood immigrants. For adulthood arrivals, a one-standard-deviation increase in SCD predicts approximately 10.7 percent ($\exp^{(-0.113)} - 1$) lower income, which is substantial in magnitude. Whereas for childhood arrivals, SCD predicts a much smaller (yet still statistically significant) penalty of 1.1 percent ($\exp^{(-0.011)} - 1$). It is noteworthy that the SCD effects remain robust even after controlling for English-language ability at both the individual and origin-country levels and socioeconomic development at the origin-country level. The effects of other covariates are generally consistent with previous findings on immigrant earnings. Just as cultural capital theory predicts, origin-country cultural distance from the host society represents an earnings disadvantage among immigrants: in the case of the U.S., those from countries with cultures that more closely resemble American culture tend to earn more, controlling for a wide array of covariates.

[Table 1 about here]

In line with Hypothesis 2, for adulthood and childhood immigrants alike, there are indeed educational gradients in SCD earnings penalties, with stronger effects for more educated immigrants than for less educated immigrants (Models 2a and 2b).¹⁰ For adulthood immigrants, the SCD penalty is relatively small among workers with less than high school education, but it is more pronounced at higher educational levels. To illustrate, among adulthood immigrants with BA (+) education, a one-standard-deviation increase in SCD leads to about a 14.7 percent (i.e., $\exp^{(-0.143-0.016)} - 1$) net earnings penalty. By contrast, the SCD penalties for childhood immigrants are not only numerically smaller but also statistically insignificant for those without college

¹⁰ AIC and BIC (Akaike 1974; Raftery 1995) support the inclusion of the interactions between SCD and the education categories.

degrees. The latter finding suggests that origin–U.S. cultural distance plays a limited role in the remuneration of low-skilled immigrants who entered the U.S. during childhood.

Figure 2 illustrates the varying relationships between SCD and predicted logged earnings for adulthood immigrants by levels of educational attainment. Across all educational levels, an immigrant worker’s earnings decline with greater cultural distance between his/her origin country and the U.S. However, the decline is noticeably steeper for more educated immigrants than for less educated immigrants, supporting Hypothesis 2.

[Figure 2 about here]

Dummy-Variable Approach. Readers may question whether our linear specifications of the main effects of SCD and their interactions with education may lead to misleading results. To allay such concerns, we estimate models interacting level-of-education dummy variables with origin-country dummy variables, allowing for non-parametric specifications for the interaction between education and SCD. In Figure 3, we plot the LOWESS curves for predicted origin-country-specific logged earnings by origin-country SCD, separately for each educational group. This alternative approach, while far less parsimonious, reveals roughly the same systematic association between SCD and predicted logged earnings, with steeper slopes for immigrants at higher educational levels. The similarity of results from these two types of model specifications lends credence to our findings.

[Figure 3 about here]

Earnings Penalties by Types of Highest Degree

To further assess whether obtaining one’s highest educational degree from a U.S. institution helps mitigate the SCD earnings penalty (Hypothesis 4), we estimate parallel regressions using the NSCG 2019 sample. By simultaneously distinguishing the level and place of highest degree,

we also consider finer distinctions by educational level among university graduates (some of whom hold graduate degrees) in the SCD earnings penalty (pertaining to Hypothesis 2). We mirror the ACS's stratified analysis by age-at-migration with separate models for NSCG respondents who finished high school abroad (a proxy for adulthood immigration) and for those who finished high school in the U.S. (a proxy for childhood immigration). We present the results in Table 2, with Models 1 and 2 corresponding to Models 2a and 2b in Table 1.

[Table 2 about here]

Consistent with our findings on adulthood immigrants in the ACS, Model 1 of Table 2 indicates that origin–U.S. cultural distance adversely predicts earnings of highly educated immigrants who completed high school abroad ($p < 0.001$). However, completion of a bachelor's degree at a U.S. college completely offsets the SCD earnings penalty, as the estimated SCD effect for this group, 0.055, does not differ statistically from 0. This suggests that origin–U.S. cultural distance plays a minimal role in affecting the earnings of immigrants holding a U.S. bachelor's degree, even if they immigrated after having completed high school abroad. For immigrants who had completed both high school and obtained a bachelor's degree abroad, a one-standard-deviation increase in SCD lowers predicted earnings by 19.2 percent. The SCD penalties remain negative, though smaller in magnitude, for foreign-born graduate degree holders who had completed high school abroad, regardless of their obtaining U.S. or non-U.S. graduate degrees. As with prior findings from the ACS, there are scant differences in predicted earnings by SCD for highly educated immigrants who attended high school in the U.S.¹¹ We interpret this result as evidence that the acculturation effect of a U.S. high school education (whether actual or

¹¹ For highly educated immigrants who completed high school in the U.S., there are no statistically significant main SCD effects or main educational gradients to begin with, even if we exclude the interaction terms between SCD and highest degree type (results available upon request).

perceived) eliminates cultural distinctions inculcated during early childhood years spent abroad, at least for immigrants who went on to earn bachelor's or graduate degrees.

[Figure 4 about here]

To visualize this interaction pattern, we plot predicted logged income against SCD by place and level of highest degree (Figure 4). The SCD earnings penalty is largest for holders of non-U.S. bachelor's degrees, followed by holders of non-U.S. graduate degrees, and holders of U.S. graduate degrees. Whereas the point estimates for SCD among immigrants holding a U.S. bachelor's degree appear positive, the upward slope of the corresponding curve should not be taken at face value. This is because the linear combination of the corresponding main and interaction effects does not differ significantly from 0. In essence, a U.S. undergraduate degree effectively offsets the earnings penalties associated with greater origin–U.S. cultural distance. In support of Hypothesis 4, the results by place and level of highest degree and the noticeable differences by high school location demonstrate the protective effects of U.S. educational credentials against cultural penalties, especially for U.S. bachelor's degrees.¹²

Earnings Penalties across Local Labor Market Contexts

Our analyses further examine variations in the SCD earnings penalty across labor market contexts. We interact SCD with both the county-level supply-side and demand-side labor market competitiveness measures, while keeping other covariate specifications the same as those shown

¹² As is evident in Figure 4, immigrants from culturally similar countries to the U.S. with foreign bachelor's degrees actually have higher predicted earnings than immigrants from the same countries with U.S. bachelor's degrees. This may seem counterintuitive, but it probably results from self-selection into adulthood immigration by those who received bachelor's degrees abroad. Citizens with a college education in countries that culturally resemble the U.S. are likely to reap high average returns to their degrees in their origin countries, so those that emigrate to the U.S. are probably distinguished by especially high returns in the U.S. labor market due to individual idiosyncrasies (i.e., field of specialization, specific institution, unobserved ability, or a combination of these factors).

in Table 1 and adding both the main effects of the county-level competitiveness measures and additional county-level covariates.

[Table 3 about here]

The main effects on immigrant earnings of the county-level supply of and demand for highly educated labor are intuitive: net of demand (supply), a greater supply (demand) of (for) highly educated workers reduces (increases) earnings. Confirming Hypothesis 5, cultural distance penalties are more substantial in more competitive local labor markets, whether competition is captured by a higher supply of educated workers or a lower demand for them.

Model 2 adds the interaction of SCD with normalized standard deviation of earnings in the local county to test Hypothesis 6 and address potential confounding due to the likely correlation between labor market competitiveness and earnings inequality. The moderating effect of labor market competitiveness of the SCD earnings penalty is robust to the additional interaction. Moreover, county-level earnings dispersion tends to be associated with higher expected earnings for immigrants. Also, as Hypothesis 6 predicted, earnings inequality in local labor markets tends to amplify the SCD earnings penalty.

[Figure 5 about here]

Figure 5 summarizes the core results from Model 2 of Table 3. Figure 5A plots the main findings for varying supply-side competitiveness, holding the demand-side constant, showing how the SCD/earnings slope is steeper the greater the local concentration of university-educated workers. Figure 5B provides a parallel visualization of how the SCD penalty varies by local occupation-level educational demand, controlling for the supply of university-educated workers. As expected, the greater the demand for educated workers, the less substantial the SCD earnings penalty.

Discussion and Conclusion

Does cultural capital yield earnings returns in labor markets? Our answer is: yes. This study leverages origin-country differences in U.S.-specific cultural capital to assess the economic returns to cultural capital in contemporary U.S. labor markets. Using the cultural distance between origin countries and the U.S. to proxy immigrants' cultural capital specific to the U.S. labor market, we find that greater origin–U.S. cultural distance consistently predicts lower earnings and inferior returns to educational credentials for immigrants. This central finding holds true both in the aggregate and for adulthood immigrants across all educational levels, across types of highest degrees, and on two large samples of the U.S. population. Moreover, the penalties of cultural distance – and hence the rewards of desirable cultural capital – are greater in regional labor markets that are more competitive and have a higher degree of earnings inequality.

The earnings penalties of origin–U.S. cultural distance are substantially weaker among those who immigrated to the U.S. during childhood. Among childhood immigrants, the SCD earnings penalties are much smaller in magnitude and only apply to those with at least some college education. The same conclusion holds true if we adopt more refined age-at-migration groups,¹³ instead of the crude binary distinction by adulthood and childhood arrivals. The robust differences by age at immigration are consistent with findings from cultural psychology research that childhood and adolescence are formative periods for inculcating cultural beliefs (Cheung, Chudek, and Heine 2010; Blakemore and Mills 2014).

Level and place of highest degree also moderate SCD earnings penalties. Consistent with our expectations, the earnings disadvantage of origin–U.S. cultural distance is more pronounced for more educated immigrants than for less educated counterparts. Furthermore, a bachelor's

¹³ Please see Figure A3 for a sensitivity analysis using refined age-at-immigration groups, yielding the same conclusion as the binary age-at-immigration groups presented in the main text.

degree from a U.S. institution effectively offsets the earnings penalty for cultural distance. This result reaffirms earlier findings on the crucial role of college in immigrants' careers (Tong 2010) by underscoring culture's repercussions for labor market stratification *among* the foreign-born. Less intuitively, holding a graduate degree from a U.S. institution is less effective than a U.S. bachelor's degree in mitigating this penalty.

We propose several possible explanations regarding this finding. One possibility is that many foreign-born U.S. graduate degree holders only arrive in the U.S. after receiving undergraduate education in their origin countries. Hence, their exposure to U.S. culture begins at a later age and has less of an assimilating impact. Graduate-level education tends to be more specialized and less socially engaging than a four-year undergraduate education, such that attending graduate programs in the U.S. alone often renders relatively weaker acculturation benefits (Rumbaut 1997). Further validation of the proposed explanations provides one important direction for future research built upon our main findings. In addition, future studies should examine other potential sources of variation in the cultural distance penalty by individuals' race/ethnicity, motivations for immigration, legal status, or the political atmosphere of local receiving contexts.

Our findings regarding the variable effects of cultural capital by individual-level characteristics indicate that cultural capital is not permanently fixed, but can vary in response to individuals' exposure to host country culture and destination schooling experiences. Although coming from a culturally more distant country constitutes a disadvantage, it can be overcome by spending some of one's childhood/adolescence in the U.S. and by attending college in the U.S. We also found that cultural capital matters more in some local contexts than in others, and this variation resonates with the degree of local labor market competitiveness and inequality. These

theoretically informed reasonings centering on cultural capital are potentially generalizable to other factors as well. Employers have more leeway to discriminate on any criteria (including but not limited to perceived cultural distance) when there they receive more applicants per job opening, and in more unequal labor markets. Further theorizing may well identify other contextual moderators for the cultural distance effects. For example, the “ethnic enclave” (Portes and Zhou 1993) and “ethnic economy” (Light et al. 1994) concepts similarly imply that in some geographically delimited labor markets, resemblance with culture of the national origin but not that of the American mainstream may counterintuitively yield superior rewards in ethnic enclaves where co-ethnic cultural norms predominate. That could be true, despite evidence challenging the claims that ethnic enclaves yield higher earnings for immigrants of the dominant ethnicity (Xie and Gough 2011), suggesting that in some locales cultural distance might actually positively predict immigrant earnings. The validity of such claims, however, remains to be established in a national-level study that engages a measure identifying ethnic enclaves at the level of counties (or some other geographic unit). But our robust results about the SCD earnings penalties suggest that such exceptional cases do not outweigh the overall adverse economic consequences of cultural distance from the American mainstream.

This study bridges research paradigms for studying culture from different disciplines in assessing cultural capital’s economic returns and its heterogeneous manifestations. Addressing cultural capital theory, the results on educational differences in the SCD earnings penalty underscore the need to consider the interactions between embodied and institutionalized forms of cultural capital in compounding inequalities. It is noteworthy that our findings persist after accounting for individual-level and origin-country-level English-language proficiency, the element of culture that has received most attention in prior studies of immigrant integration. In

light of psychological and organizational paradigms for studying culture, we have shown that prior findings from firm-/industry-based case studies regarding the essential role of cultural fit in employer decision-making are generalizable to nationwide U.S. labor markets (Rivera 2012; Goldberg et al. 2016). While existing works have only examined hiring decisions, performance evaluations, and job dismissals in elite organizations, we have quantified monetary gains derived from cultural fit across diverse work settings to broaden this literature.

Second, we have proposed and validated national-origin culture as a key explanation for the well-documented labor market penalties for foreign educational credentials in U.S. labor markets (Zeng and Xie 2004; Arbeit and Warren 2013; Lancee and Bol 2017; Damelang, Ebensperger, and Stumpf 2020). Rather than treat labor market penalties for foreign credentials as uniform, as most previous studies have, we have shown that foreign education penalties systematically vary across source countries by origin–U.S. cultural distance. Although we cannot say with certainty whether foreign degrees are indeed associated with lower work productivity (as opposed to merely being perceived in this way by employers), we have pinpointed the systematic association between cultural distance and the varying transferability of educational credentials and skills across national boundaries.

Third, we have advanced the “contexts of reception” literature on immigrants’ economic adaptations at their destinations (Portes and Zhou 1993; Marrow 2005; Portes and Rumbaut 2014; Alba and Nee 2003; Restifo, Roscigno, and Qian 2013; Ellis and Almgren 2009; Lara-García 2021). We do so by incorporating labor market competitiveness and inequality into empirical investigations of local contextual factors that influence how immigrants from different origin countries fare differentially in U.S. labor markets. We provide insights that cultural capital, proxied as originating from a country whose culture more closely resembles the

American culture, significantly enhances immigrants' economic prospects, especially in more competitive and unequal labor market environments.

We readily acknowledge several notable limitations of our study. First, our SCD index is a crude proxy for work-relevant national culture. Not only do individual immigrants from the same country vary considerably in work-relevant cultural beliefs, but they may well self-select into emigration from their origin countries precisely because of cultural non-conformity. However, these weaknesses in our measurement of culture, because they introduce measurement errors in our regression analysis, make our statistical tests more conservative, not less. Critics of our use of national origin to measure the cultural capital of all immigrants from that country certainly have a point; yet for that point to invalidate our results they would have to explain why, despite the inherent measurement issues in our approach, we nonetheless capture robust statistically and substantively significant cultural distance penalties. Absent an alternative explanation, or a better approach for measuring individual-level cultural orientations, our results provide supportive evidence for our hypotheses.

Also, while we broadly interpret the empirical links between cultural distance and the immigrant earnings penalty as either due to immigrant workers' actual productivity differentials or employer discrimination, we acknowledge that this analysis cannot fully disentangle these two causal mechanisms mainly due to data limitations. Future studies should seek to tease them apart or quantify their respective contributions by further incorporating individual-level measures of skills or productivity when more suitable datasets become available.

Notwithstanding its limitations, however, our initial foray provides grounds for applying theoretical insights from cultural capital theory to empirical assessments of monetary returns to cultural capital beyond the educational realm, which has received the most attention from

sociologists who work in the cultural capital tradition. Whereas conventional studies along the cultural capital paradigm center on social-class differences as the key source of variation in measurable cultural capital, we demonstrate that variations across national cultures have real economic consequences for the globalized workforce in the U.S. Our departure from the class-based approach is not only consistent with the original formulation of cultural capital theory, but also presents a promising avenue for restoring both culture and capital to studies of cultural capital.

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Figures and Tables (with Appendices)

Figure 1. Average Annual Earnings by Cultural Distance with the United States:

At the Origin–Country Level

Note: the blue line is the LOWESS curve based on sending-country-level average annual earnings; the grey area shows the 95% CIs.

Figure 2. Predicted Logged Earnings for Adulthood Immigrants:
By Standardized Cultural Distance and Educational Groups

Notes: Based on estimates from ACS (2014–2019). The error bars indicate the 95% CIs.

Figure 3. Predicted Logged Earnings for Adulthood Immigrants Using the Dummy-Variable Approach:
By Standardized Cultural Distance and Educational Groups

Notes: Based on estimates from ACS (2014–2019); Lowess smoothing with 95% CIs.
Estimates are obtained using the dummy-variable approach that controls for education by origin-country interactions.

Figure 4. Predicted Logged Earnings for Highly Educated Immigrants Who Completed High School Abroad:
By Standardized Cultural Distance and Types of Highest Degree

Notes: Based on estimates from NSCG (2019). The error bars indicate the 95% CIs.

Figure 5. Earnings Penalties associated with Cultural Distance for Adulthood Immigrants:
By County-level Labor Market Contexts

Notes: Fig. 5A is based on the ACS(2014-2019) adulthood-immigrant subsample with known county codes.
Fig. 5B is based on the ACS (2014-2019) adulthood-immigrant subsample with known 6-digit SOC occupational codes.
The error bars indicate the 95% CIs.

Figure A1. Cultural Distance with the U.S. by Origin Countries

Figure A2. Origin-Country-Level Average Annual Earnings by Cultural Distance with the United States:
By Four Cultural Dimensions

Note: the blue line is the LOWESS curve based on sending-country-level average annual earnings; the grey area shows the 95% CIs.
The four x-axes are calculated by subtracting the U.S. dimension-specific scores from counterparts of individual origin countries.

Figure A3. Predicted Logged Earnings by Refined Age-at-Immigration Groups

Notes: The error bars indicate the 95% CIs.

Table 1. State- and Year-Fixed Effects Models Predicting Logged Earnings: By Adulthood and Childhood Immigrants (ACS 2014–19)

	Adulthood Immigrants		Childhood Immigrants	
	Model 1a	Model 2a	Model 1b	Model 2b
Standardized Cultural Distance (SCD)	-0.113*** (0.002)	-0.016** (0.005)	-0.011*** (0.003)	0.013 (0.007)
No Shared Official Language (ref. Shared)	-0.002 (0.005)	0.022*** (0.005)	-0.033*** (0.006)	-0.028*** (0.006)
Logged Sending-Country GDP per Capita	-0.011*** (0.003)	-0.004 (0.003)	-0.003 (0.003)	-0.002 (0.003)
Educational Attainment: (ref. < HS Diploma)				
HS Diploma	0.065*** (0.004)	0.100*** (0.005)	0.105*** (0.005)	0.110*** (0.006)
Some College	0.198*** (0.005)	0.240*** (0.006)	0.267*** (0.006)	0.274*** (0.007)
BA (+)	0.792*** (0.005)	0.813*** (0.005)	0.775*** (0.006)	0.773*** (0.007)
Interactions between Education and SCD				
HS Diploma × SCD		-0.049*** (0.006)		-0.003 (0.007)
Some College × SCD		-0.091*** (0.006)		-0.017* (0.007)
BA (+) × SCD		-0.143*** (0.005)		-0.042*** (0.007)
Speaks English Well	0.165***	0.173***	0.133***	0.136***

	(0.004)	(0.004)	(0.005)	(0.005)
Race and Ethnicity: (ref. Non-Hispanic White)				
Non-Hispanic Black	-0.154*** (0.008)	-0.103*** (0.008)	-0.110*** (0.009)	-0.102*** (0.009)
Hispanic	-0.091*** (0.006)	-0.091*** (0.006)	-0.071*** (0.006)	-0.075*** (0.006)
Non-Hispanic Asian	0.069*** (0.005)	0.102*** (0.006)	0.043*** (0.006)	0.049*** (0.006)
Other Non-Hispanic	-0.065*** (0.013)	-0.054*** (0.013)	-0.044* (0.018)	-0.043* (0.018)
Male	0.426*** (0.003)	0.424*** (0.003)	0.326*** (0.003)	0.326*** (0.003)
Marital Status: (ref. Currently Married)				
Never Married	-0.078*** (0.004)	-0.081*** (0.004)	-0.163*** (0.004)	-0.163*** (0.004)
Divorced/Separated/Widowed	-0.047*** (0.005)	-0.046*** (0.005)	-0.095*** (0.006)	-0.094*** (0.006)
Age	0.058*** (0.002)	0.058*** (0.002)	0.084*** (0.002)	0.084*** (0.002)
Age Squared	-0.001*** (0.000)	-0.001*** (0.000)	-0.001*** (0.000)	-0.001*** (0.000)
Years in the U.S.	0.011*** (0.001)	0.011*** (0.001)	-0.011*** (0.001)	-0.011*** (0.001)
Years in the U.S. Squared	-0.000* (0.000)	-0.000* (0.000)	0.000*** (0.000)	0.000*** (0.000)

Citizen	0.074*** (0.003)	0.080*** (0.003)	0.085*** (0.004)	0.088*** (0.004)
Constant	6.152*** (0.044)	6.057*** (0.044)	5.863*** (0.040)	5.843*** (0.040)
Controlled for Year & State?	Yes	Yes	Yes	Yes
Observations	375,422	375,422	236,326	236,326
Adjusted R-squared	0.466	0.468	0.438	0.438
AIC	896306	895254	540430	540318
BIC	897173	896153	541260	541179

Notes: The models also included number of weeks worked, year and state dummy variables (abridged to save space).

Standard errors in parentheses; *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$ (two-tailed tests).

Table 2. Linear Regression Models Predicting Logged Earnings: By Immigrants' High School Location (NSCG 2019)

	Non-US High School	US High School
	Model 1	Model 2
Standardized Cultural Distance (SCD)	-0.213*** (0.025)	-0.289 (0.169)
No Shared Official Language (ref. Shared)	0.007 (0.035)	0.004 (0.059)
Logged Sending-Country GDP per Capita	-0.003 (0.019)	-0.012 (0.029)
Educational Attainment (ref. Bachelor's Degree, Non-US):		
Bachelor's Degree, US	-0.000 (0.051)	0.071 (0.192)
Graduate Degree, US	0.331*** (0.028)	0.312 (0.191)
Graduate Degree, Non-US	0.145*** (0.032)	0.107 (0.265)
Interactions between Education and SCD:		
Bachelor's Degree, US $\times$ SCD	0.267*** (0.050)	0.236 (0.170)
Graduate Degree, US $\times$ SCD	0.142*** (0.027)	0.272 (0.171)
Graduate Degree, Non-US $\times$ SCD	0.085** (0.029)	0.325 (0.223)

Race and Ethnicity: (ref. Non-Hispanic White)		
Non-Hispanic Black	-0.230*** (0.070)	-0.152 (0.119)
Hispanic	0.039 (0.048)	-0.120 (0.093)
Non-Hispanic Asian	0.078 (0.042)	0.043 (0.084)
Other Non-Hispanic	0.060 (0.114)	-0.052 (0.139)
Female (ref. Male)		
	-0.448*** (0.022)	-0.205*** (0.043)
Marital Status: (ref. Currently Married)		
Never Married	-0.175*** (0.034)	-0.209*** (0.052)
Divorced/Separated/Widowed	-0.022 (0.048)	-0.109 (0.097)
Age	0.119*** (0.009)	0.097*** (0.018)
Age Squared	-0.001*** (0.000)	-0.001*** (0.000)
Years in the U.S.	-0.015 (0.008)	0.002 (0.008)
Years in the U.S. Squared	0.000 (0.000)	-0.000 (0.000)
Citizen	-0.036 (0.027)	-0.035 (0.066)
Constant	7.776***	7.798***

	(0.249)	(0.474)
Controlled for Survey Cohort & Region of Residence?	Yes	Yes
Observations	10,888	2,612
Adjusted R-squared	0.178	0.165

Notes: 1. We also controlled for number of weeks worked, regions in the US (as state is unknown), and survey cohorts (abridged to save space).
 2. NSCG does not have information on the respondents' English proficiency, so we cannot control for that variable for this dataset.
 3. Standard errors in parentheses; *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$ (two-tailed tests).

Table 3. Predicting Logged Earnings for Adulthood Immigrants: Interacting SCD and County-level Labor Market Contexts

	Model 1	Model 2
Standardized Cultural Distance (SCD)	-0.470*** (0.061)	-0.597*** (0.062)
No Shared Official Language (ref. Shared)	-0.005 (0.006)	-0.005 (0.006)
Logged Sending-Country GDP per Capita	-0.002 (0.003)	-0.002 (0.003)
<i>County-level Supply of Highly Educated Workers:</i>		
County Share of BA (+)	-0.316*** (0.082)	-0.297*** (0.082)
Interaction between County Share of BA (+) and SCD County BA (+) Share $\times$ SCD	-0.650*** (0.049)	-0.387*** (0.054)
<i>County-level Demand for Highly Educated Workers ^a:</i>		
County Average Occupation-Level Preparation Requirement	0.213*** (0.042)	0.205*** (0.042)
County Average Occupation-Level Preparation Requirement $\times$ SCD	0.201*** (0.028)	0.271*** (0.028)
<i>County-level Earnings Dispersion ^b:</i>		
Normalized Standard Deviation of Earnings in County	0.364*** (0.017)	0.341*** (0.017)
Normalized Standard Deviation of Earnings in County $\times$ SCD		-0.137*** (0.011)

Educational Attainment: (ref. < HS Diploma)		
HS Diploma	0.065*** (0.004)	0.065*** (0.004)
Some College	0.203*** (0.006)	0.203*** (0.006)
BA (+)	0.767*** (0.005)	0.767*** (0.005)
Speaks English Well	0.164*** (0.004)	0.163*** (0.004)
Other County-level Demographic Controls		
County Poverty Rate	-0.615*** (0.048)	-0.650*** (0.048)
County Share with High School Education	0.413*** (0.116)	0.366** (0.116)
County Share with Some College	-0.180+ (0.102)	-0.241* (0.102)
County Share Foreign-born	0.166*** (0.030)	0.155*** (0.030)
Race and Ethnicity: (ref. Non-Hispanic White)		
Non-Hispanic Black	-0.120*** (0.009)	-0.122*** (0.009)
Hispanic	-0.083*** (0.006)	-0.084*** (0.006)
Non-Hispanic Asian	0.069*** (0.006)	0.068*** (0.006)
Other Non-Hispanic	-0.050*** (0.015)	-0.051*** (0.015)
Male	0.415***	0.415***

	(0.003)	(0.003)
Marital Status: (ref. Currently Married)		
Never Married	-0.083***	-0.083***
	(0.004)	(0.004)
Divorced/Separated/Widowed	-0.049***	-0.048***
	(0.005)	(0.005)
Age	0.061***	0.061***
	(0.002)	(0.002)
Age Squared	-0.001***	-0.001***
	(0.000)	(0.000)
Years in the U.S.	0.010***	0.010***
	(0.001)	(0.001)
Years in the U.S. Squared	-0.000	-0.000
	(0.000)	(0.000)
Citizen	0.079***	0.079***
	(0.004)	(0.004)
Constant	5.393***	5.463***
	(0.124)	(0.124)
Controlled for Year & State?	Yes	Yes
Observations	308,214	308,214
Adjusted R-squared	0.477	0.478
AIC	730580	730422
BIC	731463	731316

Standard errors in parentheses; *** p<0.001, ** p<0.01, * p<0.05, + p<0.10.

Notes: 1. The analytic sample is restricted to the ACS adulthood-immigrant subsample with known county codes.

2. The models also included number of weeks worked, year and state dummy variables (abridged to save space).

- a. County-level demand for highly educated workers is computed using the pooled 2010–19 ACS samples of the U.S. general population.
- b. County-level earnings dispersion is also computed using the pooled 2010–19 ACS samples of the U.S. general population.

Table A1. Sample Descriptive Statistics: By Adulthood and Childhood Immigrants (ACS 2014-19)

	Adulthood Immigrants	Childhood Immigrants
Total Number of Observations	375,422	236,326
% Full Sample	61.4%	38.6%
<i><u>Key Dependent Variable:</u></i>		
Log-transformed Earned Annual Income	10.5	10.4
-	(1.1)	(1.0)
<i><u>Key Explanatory Variables:</u></i>		
Standardized Cultural Distance (SCD)	0.0	0.0
	(1.0)	(1.0)
Sharing Official Language with the U.S. (%):	31.2%	20.5%
Log-transformed Sending-Country GDP per Capita ^a	2.4	2.7
	(0.8)	(0.7)
Educational Attainment (%):		
< HS Diploma	22.2%	17.6%
HS Diploma	24.7%	32.9%
Some College	11.2%	18.2%
BA (+)	42.0%	31.2%
<i><u>Other Covariates:</u></i>		
Speaks English Well (%)	74.2%	87.5%
Race and Ethnicity (%):		
Non-Hispanic White	16.1%	19.9%

Non-Hispanic Black	4.9%	4.5%
Hispanic	45.0%	54.7%
Non-Hispanic Asian	34.1%	22.3%
Other Non-Hispanic	1.0%	0.8%
Male	58.9%	58.6%
Marital Status (%):		
Currently Married	70.2%	54.4%
Never Married	20.1%	35.9%
Divorced/Separated/Widowed	9.7%	9.7%
Average Age	39.6	35.6
	(7.1)	(8.5)
Average Years in the U.S.	13.2	26.8
	(7.9)	(10.2)
Citizen (%)	34.0%	63.4%
Percentages by Year (%):		
2014	16.5%	16.6%
2015	16.9%	16.5%
2016	16.7%	16.5%
2017	17.0%	16.9%
2018	16.7%	16.9%
2019	16.4%	16.6%
Weeks Worked Last Year, Intervalled (%):		
1–13 weeks	2.5%	2.3%
14–26 weeks	2.7%	2.4%

27–39 weeks	4.2%	3.9%
40–47 weeks	5.0%	4.6%
48–49 weeks	2.5%	2.1%
50–52 weeks	83.0%	84.8%

Subsample with Valid County FIPS Codes:

Observations with Valid County FIPS Codes	308,214	191,499
% Subsample with Valid County FIPS Codes	82.1%	81.0%
Number of Unique State-County FIPS Codes Covered	430	430

County-Level Socioeconomic Contexts b:

Average Share of the County Population as Foreign-born (unit: 0–1)	0.23	0.23
Average Share of the County Population in Poverty (unit: 0–1)	0.13	0.14
Average Share of the County Population with HS Diploma (unit: 0–1)	0.18	0.18
Average Share of the County Population with Some College (unit: 0–1)	0.22	0.23
Average Share of the County Population with BA (+) (unit: 0–1)	0.26	0.25
County Average Occupation-Level Preparation Requirement (min.: 2.32, max.: 3.24)	2.63	2.60
	(0.14)	(0.13)
Normalized Standard Deviation of Earnings in County (min.: 0.46, max.: 1.95)	0.93	0.88
	(0.24)	(0.22)

Notes: Standard deviations in parentheses.

a. The original sending-country GDP per capita measures are denominated as 1000s in PPP, which are averaged over the period 1990–2010.

b. County-level socioeconomic contexts are available for the subsample with valid county FIPS codes only.