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Illuminating the Immigration-Crime Nexus: A Test of the Immigration Revitalization Perspective

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Abstract: Research shows that immigration is often associated with less crime. Yet, what remains unclear is why this is the case. The primary explanation for why immigration reduces crime, according to scholars, is the *immigration revitalization thesis*. This perspective argues that immigration revitalizes communities by promoting local business growth, bolstering social ties, and enhancing conventional institutions (e.g., churches, voluntary organizations), which then reduce crime. These ideas, however, have never been tested. Using longitudinal data from 139 metropolitan statistical areas (MSAs) between 2000 and 2019, we examine whether the relationship between immigration and violent crime is mediated by changes in the percentage of households headed by married couples, number of ethnic businesses, and/or number of immigrant/ethnic-oriented organizations. The results from the generalized structural equation models (GSEM) and mediation tests offer some support for the *immigration revitalization perspective*.

Keywords: immigration; violence

"Once I thought to write a history of the immigrants in America. Then I discovered that the immigrants were American history."—Oscar Handlin

For more than half a century, the United States has undergone a precipitous growth in its foreign-born population. Between 1965 and 2019, the number of immigrants living in the United States increased nearly five-fold from 9.6 million to a record 44.9 million [1]. While immigrant growth during the COVID-19 pandemic slowed to levels not seen in decades, recent evidence suggests that it is back on the rise. Data from the U.S. Customs and Border Protection reveal that there were 2.37 million encounters at the U.S.–Mexico border in 2022—the most ever recorded [2]. Officials have responded to the historic flow in migrant crossings by alleging that border communities are being "invaded" by drug cartels and criminal gangs. In a recent roundtable, Texas Governor Greg Abbott claimed that "lax [border] policies invite crime and contraband into our communities because dangerous actors can more easily enter our country and wreak havoc on innocent families" [3]. Yet, if contemporary scholarship is any guide, the unprecedented number of migrant crossings at the U.S.–Mexico border should be treated as a humanitarian crisis, not a crime problem.

Over the past two decades, there has been a growing interest in research examining the effects of immigration on crime [4,5]. These studies yield two conclusions. First, immigrants engage in fewer crimes than their native-born peers when examining a variety of justice-related outcomes (e.g., violent offending, drug use, arrest, incarceration) [6–8]. Second, community immigration almost always exerts a null or inverse effect on violence, especially in communities that bore the brunt of deindustrialization and urban decay [9,10]. In short, the perception that immigration breeds more crime has been widely discredited as a myth, and is instead now viewed as a crime suppressor.

In a recent review of this body of work, a meta-analysis by Ousey and Kubrin [5] found that the macro-level relationship between immigration and crime is "overall negative but very weak." Ousey and Kubrin also identified several challenges and remaining questions



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to address in the literature moving forward. One of the most pressing is identifying and testing the intervening mechanisms that explain the immigration—crime nexus [11,12]. In other words, while research shows that immigration is associated with less crime, scholars have yet to clarify *why* this is the case. This omission is critical considering that theoretical positions posit that the effect of immigration on crime is indirect, operating through changes in demographic, economic, and family structures [12,13]. Yet, little research has tested the possible intervening factors that connect immigration and crime, "leaving us essentially in the dark" about the mechanisms that underlie this relationship [14] (p. 3). Among studies that have examined this issue, many focus on just one or two mechanisms, are cross-sectional, and some employ less rigorous mediation techniques [15,16], thus raising questions about the validity and reliability of findings obtained from prior research.

Against this backdrop, the goal of the present study is to shine light on the immigration-crime nexus by evaluating several intervening measures that may explain why immigration is related to less violence. Specifically, we assess whether the relationship between immigration and violent crime for the years 2000–2019 across metropolitan statistical areas (MSAs) is due to changes in familial structures, number of ethnic businesses, and/or immigrant-serving organizations. These explanations have been identified and discussed at length as potential mediators in prior research and, in a few cases, tested [17]. However, they have never been examined across multiple waves of data, which would allow for more rigorous mediation tests and increase confidence in causality.

In addition to furthering knowledge, we argue that identifying and testing the mediating processes that explain the immigration–crime nexus can also benefit theory. According to scholars, the predominant explanation for why immigration reduces community crime is the *immigrant revitalization perspective* [18,19]. While the concepts and propositions of this theory have not been fully articulated, we rely on the arguments put forth by Vélez [10]. Vélez argues that immigrants revitalize communities in three key ways: (1) bolstering kinship networks and social ties by settling near family and other co-ethnics; (2) invigorating local economies by opening new businesses that cater to residents; and (3) expanding community institutions such as churches, schools, and immigrant-focused agencies that provide valuable resources to residents and cultivate relationships between the community and local officials. Collectively, these processes are said to promote neighborhood organization and strengthen informal social control, which then reduces crime. Hence, another aim of this study is to define and separate the *immigration revitalization perspective* into falsifiable hypotheses and conduct a more rigorous test of these ideas than in prior research.

Testing the intervening mechanisms that explain the *immigration revitalization perspective* could also benefit policy. If research shows that one of the reasons why immigration reduces crime is by rejuvenating neighborhood economies through the creation of ethnicowned businesses, then public policy can be used to facilitate business loans through local banks to immigrants and co-ethnics, provide expanded tax breaks for business owners to encourage entrepreneurial investment, and open a small business office for cities to assist owners with permit requirements and other pertinent information. In all, identifying the causal link(s) between immigration and crime will expand both theory and scientific knowledge and, potentially, result in policy initiatives that further reduce crime and are cost effective.

In the sections that follow, we provide an overview of prior research on immigration and crime and further elaborate on the *immigration revitalization perspective*. Next, we highlight existing research on the possible intervening factors that explain the immigration-crime relationship. Following this discussion, we introduce our hypotheses, data and methods, before presenting the results. We then conclude with a summary of the findings, limitations, and directions for future research.

1. Immigration Revitalization Perspective

One of the most contentious issues regarding immigration is its potential impact on crime. This concern is not new [20]. More than a century ago, several writers linked waves

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of Southern and Eastern European immigrants with criminality and other social problems (e.g., poverty, illiteracy, disease) [21,22]. In 1908, then New York City Police Chief Theodore Bingham published an article labeling Russian Hebrews as "burglars, firebugs... and highway robbers [23] (p. 384). However, Bingham viewed Italians as the "greater menace to law and order," connecting them with crimes ranging from "blackmailing, blowing up shops and houses, and kidnapping" [23] (p. 385). Fast forward to today and immigration and crime is still a hot-button issue. A 2019 Gallup Poll asked respondents to rate the impacts of immigration on several social and economic indicators, including jobs, America's cultural identity, and crime [24]. Crime elicited the greatest fear among respondents with 42% stating that immigrants make the crime situation in the United States worse, while only 7% believed immigrants make it better. Moreover, the recent surge in migrant crossings at the U.S.–Mexico border are further heightening public fears regarding immigration and crime due to media accounts of rising violence, increases in human trafficking, drug smuggling, and a supposed influx of suspected terrorists.

Despite these claims, contemporary research has largely dispelled the myth of the *criminal immigrant* [25]. In fact, a plethora of studies show that the opposite is true: *more immigration often means less crime*. Focusing on the macro-level, empirical evidence indicates that the inverse relationship between immigration and crime is applicable to different criminological outcomes (e.g., homicide rates, property crime rates, drug overdose deaths), operational definitions of immigration (e.g., percent foreign-born, percent recent immigrants), spatial units (e.g., census tracts, cities, MSAs, counties), and temporal designs (i.e., cross-sectional, longitudinal) [5,15,26]. Others claim that historic increases in immigration are at least partly responsible for the violent crime drop with these crime-reducing effects benefiting native-born Blacks, Whites, and other traditional groups in the United States [27–29].

In light of these findings, numerous explanations have been given to describe why community immigration reduces crime. These perspectives argue that immigrant concentration increases crime due to changes in the demographic composition of the community (i.e., increases in young males), economic deprivation and strain, labor force displacement, and most notably, social disorganization [13,30]. At a minimum, direct tests of the immigration–crime relationship have widely debunked these theories [5]. Today, scholars link the inverse relationship between immigration and crime to selection effects, changes in familial structures, and deterrence due to formal social control and the threat of deportation [4,14,31]. Yet, as noted above, the primary explanation is the *immigration revitalization thesis* [18,19].

Vélez proposed that immigration curtails crime in three ways. The first is that communities with large and growing immigrant populations have dense social ties due to the tendency for newcomers to settle in places near relatives and other co-ethnics [11]. As Desmond and Kubrin [16] (p. 583) explain, while some may interpret this settlement pattern as "clannish," the spatial concentration of immigrants facilitates kinship networks, communication and interaction, and social capital [30,32]. Thus, immigrant communities are not disorganized areas but instead tight-knit communities where informal social control is strong, and residents maintain a firm commitment to upholding cultural norms and pursuing upward mobility [33]. Robust social ties also assist newcomers in adapting to the United States by providing them with a cultural and linguistic familiarity and social capital to acquire housing, employment, and other critical resources that facilitate their integration [34]. Furthermore, Zhou and Bankston illustrate how the Vietnamese enclave in New Orleans, LA provides co-ethnics and their children with guidance and social support [35] while also discouraging criminogenic aspects of American culture that influence downward assimilation [36,37].

The second component of the *immigration revitalization perspective* is reinvigorated local economies. As Sampson [9] and others highlight [38], immigration has played a key role in re-energizing many of America's once distressed cities, fueling job growth, housing demand, population increase, and urban revival. Indeed, cities that experienced the largest

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drop in violence since the 1990s are the same cities that underwent the largest growth in immigration and their local economies [29]. In contrast, cities such as those located in the Rust Belt (e.g., Detroit, Baltimore) have not experienced the same reductions in crime or economic gains, which is presumably because these places have not attracted large numbers of immigrants [9]. One possible explanation for the economic gains associated with immigration is that foreign-born individuals have higher rates of employment than natives and a greater commitment to work [31]. Research also shows that high rates of employment and a strong dedication to work among immigrants bolster community levels of informal social control, which decreases crime [14,39]. Immigrants are also more entrepreneurial than the average native-born resident [40]. According to the American Immigration Council, foreign-born individuals are 80% more likely than natives to start a new business, while another report found that more than 40% of Fortune 500 companies were founded by immigrants or their children [41]. At the broader level, ethnic businesses are the epicenter of immigrant enclaves and serve many important functions, including providing new immigrants with a reliable source of employment, access to ethnic-oriented goods and services for residents, and bolstering the economic and tax revenue of the area [33,42].

The third and final component of the *immigrant revitalization* perspective suggests that expanding immigrant populations are associated with stronger community institutions (e.g., churches, schools, social services). These communal institutions are a valuable asset for the neighborhood and its residents. Shihadeh and Winters document how in Latino communities that lack co-ethnic networks, Catholic churches fill the void by providing residents with resources and social support, which protect them from violence [43]. In addition, neighborhood institutions such as immigrant advocacy groups provide newcomers with assistance with employment, housing, and other human capital skills and organize events that draw and facilitate social ties, thus bolstering informal social control in the community [10,44]. Finally, research suggests that community institutions can serve as brokers on the community's behalf, thus strengthening relationships between the enclave and government officials and providing the community with an additional tool to solicit external resources [44–46].

2. Mediating Mechanisms on Immigration and Crime

As noted above, scholars have presented numerous arguments for why immigration inhibits crime and have conducted dozens of direct tests of these ideas (e.g., effect of percent foreign-born on crime). However, only a few have examined the specific intervening processes that explain the immigration–crime link. Among those that have, studies have primarily focused on the impact of familial structures [13,47], ethnic/Hispanic businesses [15,17], social capital [48], friendship/kinship networks [11], immigrant-oriented organizations [17], and collective efficacy [11] in explaining the macro-level relationship between immigration and crime.

Overall, this body of research yields mixed findings regarding the role of these characteristics as mediators on the immigration—crime nexus. For instance, Stansfield found that immigrant concentration was linked to lower property crime rates across cities with at least 100,000 residents. When a measure for Hispanic-owned businesses and firms was included in the model, the association between immigration and crime was no longer significant, suggesting that Hispanic businesses mediate the relationship—a finding consistent with the *immigration revitalization perspective* [15]. Furthermore, Kubrin, Kim, and Hipp [17] analyzed the relationship between immigration, ethnic-owned businesses, and crime rates across census tracts in Southern California. They found that their measure of immigration—immigrant group heterogeneity—was linked to less crime. However, their measures for ethnic businesses (i.e., total, proportion, and diversity of ethnic firms) did not mediate this relationship and instead were associated with higher rates of violent crime. Kubrin and colleagues explain their findings by proposing that ethnic businesses and co-ethnic

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workers may be "crime attractors" for offenders or that their results may be limited to Southern California.

Other studies have also produced contradicting findings. Kubrin and Desmond's [11] analysis of immigrant concentration and adolescent violence found that their three indicators of social capital—parental interaction, parental involvement in civic organizations, and collective supervision—exerted no mediating effect on immigration and crime. In another study, Feldmeyer and colleagues examined data from the Project on Human Development in Chicago Neighborhoods (PHDCN) to assess whether collective efficacy and friendship/kinship networks mediate the link between immigrant concentration and homicide [17]. They found no association between immigrant concentration and homicide. In addition, their analysis revealed that immigration was related to stronger friendship/kinship networks but weaker collective efficacy, which may explain the null relationship between immigration and crime.

The mechanisms that have garnered the most support for mediating the immigration-crime relationship are those on familial structure. Ousey and Kubrin's analysis of 159 cities between 1980 and 2000 found that increases in percent foreign-born were associated with decreases in violent crime rates and that this effect was mediated by changes in family instability (i.e., percent divorced, percent separated). In other words, immigration reduces violence by strengthening two-parent household rates across cities—a robust deterrent of crime [49,50]. In another study, Barranco, Harris, and Feldmeyer examined the change in Latino homicide victimization in new destination counties [47]. They found that changes in Latino immigration between 2000 and 2010 yielded a significant drop in Latino homicide victimization in emerging immigrant areas and that changes in percent of married and percent extended families accounted for a substantial proportion of this effect.

Taken together, studies on the intervening mechanisms of immigration and crime "raise more questions than answers" [45] (p.360). These studies are also limited in several ways, which may explain their inconsistent findings. One limitation is that prior research typically relies on less sophisticated or preliminary mediation techniques. An example of one popular approach is the Baron and Kenny method, which involves running a primary regression equation on the effect of X on Y, holding other variables constant. If a significant relationship between X and Y is observed, another regression equation is conducted, this time, with M or the potential mediating variable included. If M yields a significant effect on Y and the coefficient for X is no longer significant or is drastically reduced, then this impact is interpreted as evidence of mediation [51]. Most studies stop here. Yet, to determine whether this mediating effect is statistically significant, studies need to conduct a Sobel test or use structural equation modeling (SEM) [52,53]. Without these tests, any findings of mediation with primary and secondary regression equations are at best preliminary. Another prominent limitation is that most tests of the intervening mechanisms use crosssectional data, which may produce biased estimates. Longitudinal data are preferred over cross-sectional information in mediation analysis because the former can better account for temporal order and control for time-invariant confounders, thus increasing confidence in causality [54]. This issue is not limited to mediation. Direct tests of the immigration crime relationship also produce conflicting findings based on whether cross-sectional or longitudinal analyses are used, even within the same study [5,29].

3. Current Study and Hypotheses

The current study builds on the immigration—crime nexus in several important ways. First, given that the *immigration revitalization perspective* is the dominant paradigm proposed by scholars to explain the inverse association between immigration and crime, we separate the theory's arguments into three testable and falsifiable propositions: (1) dense social ties due to the tendency for immigrants to settle near family, friends, and other co-ethnics; (2) revitalized local economies as a result of the entrepreneurial capacity and strong commitment to work among immigrants; and (3) the idea that large and growing immigrant populations strengthen and expand community institutions [10].

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To test these ideas, we evaluate three specific mechanisms—percentage of households headed by married couples, number of Hispanic- and Asian-owned businesses, and the number of immigrant-oriented organizations. All three mechanisms have been discussed at length in prior research, and both ethnic businesses and immigrant-serving organizations make sense in terms of how they tap into or are indicators of the second and third propositions of the *immigrant revitalization perspective* [14,42]. However, percentage of married households and the first proposition require further elaboration. While data limitations prohibit us from evaluating whether immigrants are settling in places near family and friends, we argue that household structures headed by married couples can serve as a proxy for a community's level of social ties. First, immigrants are more familistic and more likely to marry in comparison to the native-born [55,56]. In addition, prior research shows that single-parent homes and family disruption attenuate socialization and community ties and increase crime [13]. For these reasons, we argue that the percentage of married households brought on by immigration should serve as an indicator for a community's level of social ties. Against this backdrop, we present four hypotheses related to the direct and indirect effects between immigration, our three mediators, and violent crime.

Hypothesis 1. *There will be an inverse association between immigration and violent crime rates.*

Hypothesis 2. The inverse association between immigration and violent crime rates will be mediated by the number of ethnic businesses.

Hypothesis 3. The inverse association between immigration and violent crime rates will be mediated by the number of immigrant-focused organizations.

Hypothesis 4. The inverse association between immigration and violent crime rates will be mediated by the percentage of married households.

4. Data and Methods

Data for this study come from three main sources: the Federal Bureau of Investigation (FBI), the U.S. Census Bureau, and the Urban Institute. The unit of analysis is U.S. metropolitan statistical areas (MSAs): specifically, those with a population of at least 100,000 residents between the years 2000 and 2019.² A total of 248 MSAs met this criterion. However, 109 were omitted due to missing data, resulting in a final list of 139 MSAs.³ Data for each MSA were drawn at three different time periods: 2000, 2010, and 2017. When we pool information from all three waves, the total number of observations in our models is 417 (139 MSAs \times 3 waves = 417).

5. Dependent Variable

The dependent variable in the analysis is the violent crime rate. This rate is computed by summing counts of homicides, robberies, and aggravated assaults and dividing this figure by each MSA's total population. Most prior studies that analyze violent crime include rape in their operational definition [13]. However, we exclude sexual assault because the FBI altered its definition of rape in 2013 and because of the high degree of nonreporting associated with this offense. Data on violent offenses are obtained from the FBI's Uniform Crime Report (UCR) via their website (https://www.fbi.gov/how-we-can-help-you/more-fbi-services-and-information/ucr (accessed on 20 March 2023)). To account for year-to-year fluctuations in crime, violent crime rates for each wave are based on the average of three consecutive years. That is, the violent crime rate for 2000 is computed by taking the average violent crime rate for years 2000 to 2002, the 2010 rate using 2010 to 2012 data, and the 2019 rate using 2017 to 2019 data.

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6. Independent Variables

Our key independent variable is immigration, which is defined as the percentage of the MSA population that is foreign-born. Percent foreign-born is the most frequently used measure of immigration, although studies employing other definitions (e.g., percent recent immigrant, immigration index) tend to yield similar results [5].⁵ We use this general measure of immigration considering that our theoretical arguments focus on the comprehensive effects of immigration on crime and do not place an explicit focus on specific groups (e.g., Latinos, recent immigrants).

We also include several control variables in our models, including total population (logged), percent young males (age 15–34), and percent employed in professional and managerial occupations. Consistent with prior research on immigration and crime, we also control for racial diversity [58]. Racial diversity is measured using Blau's equation:

$$1-\left(\sum_1^m(p_m^2)
ight)$$

where *m* represents each racial group for a given *p* or MSA. For every MSA, the proportion for each racial group is squared, summed, and then subtracted from 1. Scores near 0 represent more homogenous MSAs, whereas a score closer to 1 denotes greater racial/ethnic diversity [59]. Finally, we include two index measures in the analyses. Concentrated disadvantage was created by standardizing and summing the scores of five variables: percent unemployed, percent of population 25 years and older with no high school degree, percent of households receiving public assistance, percent of households living below the poverty line, and percent of female-headed households. Factor analysis revealed that these five measures load on a single factor with an eigenvalue of 3.8 and a reliability of 0.91. Residential instability combines the standardized values of two measures: percent rent and percent vacant. Both measures load on a single factor with an eigenvalue of 1.4 and a reliability of 0.62. Data for all independent variables are drawn from the 2000 Decennial Census and the ACS' 5-year estimates for 2007–2011 and 2015–2019.

7. Mediating Variables

We also include three mediating variables that may explain the relationship between immigration and violent crime. The first mediator is percentage of married households. This variable is defined by accounting for the percentage of households headed by married couples. Data for this measure come from the 2000 Decennial Census and the ACS′ 5-year estimates for 2007–2011 and 2015–2019. The second mediator is ethnic businesses (logged), which is a count-based measure of the total number of businesses and firms that are Hispanic- or Asian-owned.⁶ Data for these measures were drawn from two sources: the U.S. Census' Survey of Business Owners (SBO) for 2002 and the U.S. Census' Annual Business Survey (ABS) for 2018. Unfortunately, data on ethnic businesses are not available at the MSA level for 2010.⁷ To address this issue, we rely on linear interpolation and plot the trends for the total number of ethnic businesses between 2002 and 2018 for each MSA and take the midpoint of these figures for 2010.

The third mediator is the number of immigrant/ethnic organizations. Following prior research, we measure immigrant/ethnic organizations by drawing on data from the Urban Institute's National Center of Charitable Statistics (NCCS) [60]. An organization was classified as an ethnic/immigrant agency if their National Taxonomy of Exempt Entities (NTEE) code indicated that they are organizations of Ethnic/Immigrant Centers and Services, Cultural and Ethnic Awareness, Civil Rights, Advocacy for Specific Groups, and Minority Rights. We also included six general categories of organizations in our measure of immigrant/ethnic non-profits: Human Services; International, Foreign Affairs, and National Security; Civil Rights, Social Action, Advocacy; Arts, Culture, and Humanities; Education; and Employment, Job Related.

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8. Analytical Strategy

To assess whether our three mediators explain the link between immigration and violent crime rates, we use generalized structural equation modeling (GSEM). GSEM is an extension of structural equation modeling (SEM), which has become increasingly popular in criminology and criminal justice research because of its ability to estimate multiple models at the same time, conduct confirmatory factor analysis, and test for latent or unobserved variables [61]. In addition, SEM and GSEM have been used in prior research to conduct mediation tests [11,62].

In the present study, we rely on GSEM because of the panel structure of our data. For our analyses, we fit multiple models to analyze the relationship between immigration, our three mediating measures, and violent crime using the gsem command in Stata 17.0 [63]. The first set of results estimates one mediating factor at a time. In each of these models, two equations are computed. The first equation estimates the effect of immigration, the mediator, and all controls on violent crime rates, while the second equation computes the effects of immigration and all controls on the mediator (results from the first equation are presented in Table 2 and the second equation in Table 3). Next, we include all three mediating measures into the two-equation model and compute the indirect and total effects using the *nlcom* command. The *nlcom* command produces coefficients and *p*-values for the indirect and total effects of immigration and each intervening variable on violent crime. All models include dummy variables for each MSA and the three years of observation (Auburn-Opelika, AL and the year 2000 serve as the reference categories). By including these dummy variables, our analyses are akin to fixed effects regression and control for all time-invariant unobserved covariates that may affect immigration and violent crime [64]. Finally, we employ the generalized Huber/White/sandwich estimator or "cluster" option to compute the standard errors.8

9. Results

We begin by describing the sample of metropolitan statistical areas (MSAs) across the study period. Table 1 displays the descriptive statistics for all analytic measures, including their means, standard deviations, and range, separated by year of observation. As seen in Table 1, the average violent crime rate declined from 495.7 in 2000 to 369.3 in 2019—a 25% reduction. Interestingly, the mean for percent foreign-born across MSAs grew by 25% from 8.8% to 11.1% across the study period. The descriptive statistics for the mediating measures are also notable. The average number of ethnic firms (not logged) across all MSAs in 2000 was 15,257. Less than two decades later, this figure more than doubled to 39,201 in 2019. There was also a sizable increase in the number of immigrant/ethnic organizations over the study period from 285 to 406. In contrast, the average proportion of married households across MSAs decreased slightly from 52% in 2000 to 48% in 2019. Regarding the covariates, most did not change much between 2000 and 2019. The only exception is economic disadvantage. On average, the level of disadvantage across MSAs declined from 0.11 in 2000 to -0.08 in 2019.

Across Table 1, the pattern of results suggests that the MSAs in the sample experienced a significant growth in their foreign-born population, number of ethnic businesses and immigrant-oriented agencies, as well as a substantial drop in violent crime. The next set of results assess whether within-group increases in immigration are associated with within-group decreases in violence—and, more importantly, if there is a relationship between immigration and violent crime, is this association mediated by any of the three intervening measures?

Table 2 presents the results predicting the effects of immigration on violent crime with each of the three mediating measures. All models include dummy variables for each MSA in the analysis, but we omit their results from the table due to space constraints (results available upon request). Model 1 is the baseline model in that we regress violent crime on immigration and all covariates (i.e., no mediators). Models 2, 3, and 4, build on the baseline model by including each mediating factor into the analysis separately, while

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Model 5 includes all three simultaneously. Turning now to the results, the findings from Model 1 of Table 2 reveal that within-MSA increases in percent foreign-born are associated with decreases in violent crime (b = -13.35; p < 0.10), supporting our first hypothesis and prior research [14]. Specifically, a one percent increase in immigration is associated with 13 fewer violent crimes (per 100,000), net of controls. Other measures that yield a significant association with violent crime in Model 1 include total population (b = -97.33; p < 0.10), percent employed in management positions (b = -9.38; p < 0.05), economic disadvantage (b = 17.05; p < 0.05), residential instability (b = -54.05; p < 0.01), and the dummy variable for year 2010 (b = -53.56; p < 0.01). The effects for all measures are consistent with prior research with the exception of residential instability. Residential instability is often linked to increases in community crime because of attenuated social networks and collective efficacy [66]. It is possible that the variables used to compute the residential instability index in this study—percent rent and percent vacant households—are not indicators of these processes. Additionally, most prior studies include a variable for percent moved in their index measure of residential instability. However, we omitted this measure because the follow-up periods (e.g., moved within the last 5 years) were not consistent across the datasets.

Table 1. Descriptive Statistics.

	20	00			20	10			20				
	Mean	SD	Min	Max	Mean	SD	Min	Max	Mean	SD	Min	Max	
Violent crime rate	495.74	206.19	77.03	1118.47	390.19	148.51	56.67	969.63	369.28	170.31	55.87	1089.50	
Percent foreign-born	8.84	7.57	1.30	40.20	10.68	7.64	2.27	37.99	11.05	7.54	2.43	40.70	
Total population	1,294,951	2,555,783	115,092	21,199,865	1,179,377	1,838,923	101,566	12,777,695	1,288,273	1,964,675	102,586	13,249,614	
Percent management	32.83	4.72	24.02	45.4	34.59	4.72	22.41	58.64	37.10	6.11	23.32	63.65	
Residential instability	0.00	1.01	-2.39	3.46	0.00	1.12	-2.78	4.03	0.00	1.14	-2.97	3.57	
Disadvantage	0.11	3.59	-5.80	14.44	-0.05	3.04	-5.69	11.26	-0.08	2.97	-5.37	10.99	
Racial diversity	0.37	0.13	0.06	0.63	0.37	0.12	0.10	0.63	0.38	0.13	0.08	0.67	
Percent young male	14.65	1.89	9.54	20.75	14.38	1.69	9.58	20.34	14.27	1.63	9.45	18.43	
Ethnic businesses	15,257.14	51,943.14	53	404,891	27,229.02	83,622.26	264	614,196	39,200.89	115,853.60	290	823,500	
Ethnic organizations	284.65	409.35	7	3168	353.17	506.30	14	3915	405.90	590.13	8	4532	
Percent married	51.80	4.27	38.82	69.83	48.80	4.67	22.14	70.15	47.65	4.44	25.98	70.18	
Observations		13	9			13	9		139				

Table 2. Generalized Structural Equation Models Predicting the Effect of Immigration and Mediators on Violent Crime Rates, Net of Controls.

	M	lodel	1	M	[ode]	1 2	M	lodel	3	M	odel	4	M	odel	5
Percent foreign-born	-13.35	+	(7.93)	-11.64		(8.11)	-4.81		(7.47)	-13.50	**	(4.11)	-3.95		(8.18)
Total population (ln)	-97.33	+	(50.47)	-84.93	+	(50.13)	-142.0	**	(46.33)	-98.90	**	(35.84)	-141.45	**	(52.40)
Percent management	-9.38	*	(4.78)	-8.58	+	(4.92)	-4.23		(4.27)	-9.52	*	(3.89)	-3.56		(4.62)
Economic disadvantage	17.05	*	(7.86)	17.23	*	(7.86)	17.31	*	(7.16)	17.01	**	(5.45)	17.19	*	(7.10)
Residential instability	-54.05	**	(19.29)	-52.05	**	(19.09)	-48.46	**	(16.62)	-53.67	***	(13.24)	-43.71	**	(16.55)
Racial diversity	2.64		(1.80)	2.83		(1.79)	0.99		(1.74)	2.62		(1.42)	1.05		(1.71)
Percent young male	20.33		(13.97)	20.03		(13.84)	11.58		(14.20)	20.54	*	(9.21)	12.64		(14.73)
Year 2010	-53.56	**	(18.17)	-36.30		(24.31)	-55.02	**	(17.87)	-52.02	*	(22.69)	-26.71		(35.36)
Year 2019	-36.96		(29.58)	-11.24		(38.61)	-32.45		(28.65)	-34.68		(34.00)	9.70		(54.64)
Ethnic firms (ln)				-33.53		(29.49)							-33.73		(28.28)
Immigrant organizations							-0.33	***	(0.06)				-0.33	***	(0.06)
Percent married households										0.37		(4.11)	2.59		(4.84)

Note: All models include dummy variables for each MSA. N = 417 observations. Standard errors are in parentheses. *** p < 0.001 * p < 0.01 * p < 0.05 + p < 0.10 (two-tailed tests).

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Model 2 of Table 2 introduces the first mediator into the analysis—ethnic firms. As seen in the results, the coefficients for both percent foreign-born and ethnic firms are not statistically significant. This suggests that ethnic firms do not mediate the immigration–crime relationship. Consistent with Model 1, total population (b = -84.93; p < 0.10), percent management (b = -8.58; p < 0.10), economic disadvantage (b = 17.23; p < 0.05), and residential instability (b = -52.05; p < 0.01) retain their significant associations with violent crime. In general, a 10% increase in population size results in a reduction of 8 violent crimes per 100,000 residents (-84.93*log(1.10) = -8.09). This finding aligns with the arguments of Sampson and others who contend that immigration reduces community crime by reversing population loss [9,10]. Similarly, for every one percent increase in percent managerial, there are approximately 9 fewer violent crimes, whereas a one standardized unit increase in residential instability results in a decrease of 52 violent offenses per 100,000. In contrast, a one standardized unit increase in economic disadvantage is associated with approximately 17 more violent crimes (per 100,000) across MSAs.

Next, Model 3 of Table 2 examines the possible mediating effect of immigrant/ethnic organizations on immigration and violent crime. The results from the model reveal that within-MSA changes in the number of immigrant/ethnic organizations available are significantly associated with lower violent crime rates (b = -0.329; p < 0.001). Additionally, the coefficient for percent foreign-born is now null and reduced by nearly 70% in comparison to the effect from Model 1, thus providing preliminary evidence for mediation. To illustrate the impact of immigrant/ethnic organizations on violent crime, we calculated the average change in the number of organizations between 2000 and 2019 (i.e., 121) and multiplied this figure by the coefficient. The result shows that MSAs, on average, experienced a decrease of nearly 40 violent crimes (-0.329*121 = -39.81) across the study period due to changes in immigration and ethnic-oriented organizations, net of controls.

Model 4 of Table 2 examines whether the percentage of households headed by married couples mediates the association between immigration and crime. As discussed earlier, familial structure has garnered the most consistent support as a mediator in prior research [13,34]. The results from the model demonstrate that the percentage of households headed by married couples yields no effect on violent crime, while the coefficient for percent foreign-born remains significant (b = -13.50; p < 0.01). This suggests that the percentage of households headed by married couples does not mediate the immigration—crime relationship, at least not in this study. One potential explanation for this null relationship is that the mean for the percentage of married households across MSAs did not change much over the study period (and within-group change is what our analyses focus on).

Finally, Model 5 of Table 2 examines the effect of immigration on violent crime when all three mediators are included. Consistent with prior models, the results show that immigrant/ethnic organizations remain significantly associated with violent crime, while the effects for ethnic firms, percentage of married households, and percent foreign-born are null. Based on these results, only the measure for immigrant/ethnic organizations has the *potential* to mediate all or a portion of the relationship between immigration and crime. Additional analyses are required to establish mediation, which we present in the next set of results.

Table 3 examines the effect of immigration on all three mediators separately. The purpose of this table is to ensure that the independent variable of interest, in this case percent foreign-born, predicts the intervening measures—which is another requirement for confirming mediation. As seen in the results, percent foreign-born is positively and significantly associated with all three mediators. On average, every one percent increase in percent foreign-born within MSAs results in an additional five ethnic firms $(\exp(0.0511) - 1)*100 = 5.24)$, 26 immigrant/ethnic organizations, and a 0.39 percent increase in households headed by married couples. Yet, we reiterate that only immigrant/ethnic organizations can exert a mediating effect on immigration and crime considering that this was the only measure associated with violent crime in the previous table. Nevertheless, we present the mediation tests for

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all three measures, as this information is necessary for computing the total effect from the models.

Table 3. Generalized Structural Equation Models Predicting the Effect of Immigration on Mediators.

	E	Model 1: Ethnic Firm			Model 2: ant/Ethn	<u>-</u>	Model 3: Married Households			
Percent foreign-born	0.05	**	(0.02)	26.02	*	(11.32)	0.39	***	(0.06)	
Total population (ln)	0.33	**	(0.13)	-135.90	*	(64.53)	4.31	***	(0.37)	
Percent management	0.02		(0.02)	15.69	**	(5.71)	0.09	*	(0.05)	
Economic disadvantage	0.01		(0.02)	0.79		(5.68)	0.12	†	(0.06)	
Residential instability	0.01		(0.01)	17.00		(14.43)	-1.02	**	(0.15)	
Racial diversity	0.01		(0.00)	-5.01	**	(1.65)	0.04	*	(0.02)	
Percent young male	-0.01		(0.04)	-26.61	*	(11.21)	-0.58	***	(0.11)	
Year 2010	0.61	***	(0.09)	-4.44		(13.67)	-4.24	***	(0.17)	
Year 2019	0.95	***	(0.16)	13.73		(18.61)	-6.26	***	(0.26)	

Note: All models include dummy variables for each MSA. N = 417 observations. Standard errors are in parentheses. *** p < 0.001 ** p < 0.01 * p < 0.05 † p < 0.10 (two-tailed tests).

Table 4 displays the indirect and total effects of immigration, ethnic firms, immigrant/ethnic organizations, and percentage of married households on violent crime rates. The indirect and total effects were computed by using the postestimation command *nlcom* after Model 5 of Table 2. The indirect effect is calculated by multiplying the coefficient for the effect of immigration on the mediator and the coefficient for the mediator on violent crime (computed for each intervening measure separately). The total effect is computed by summing the indirect effects for all three mediators and the direct effect (i.e., coefficient for percent foreign-born in Model 5 of Table 2). Table 4 of Model 1 presents the indirect and total effects for percent foreign-born, ethnic firms, and violent crime. To establish mediation, the coefficients and p-values for both the indirect and total effect must be significant and in the same direction. As seen in the first model, the results reveal that the indirect effect of ethnic firms on immigration and crime is negative but null (b = -1.72; p < 0.32). Next, we examine whether immigrant/ethnic organizations mediate the relationship between immigration and crime. The results in Model 2 of Table 4 reveal that both the indirect and total effect are significant and negative. Specifically, the indirect effect for immigrant/ethnic organizations is (b = -8.70; p < 0.05) and the total effect is (b = -13.35; p < 0.10). Based on the ratio (-8.70/-13.35 = -0.65), immigrant/ethnic organizations account for approximately 65% of the total effect between immigration and violent crime. Finally, Model 3 of Table 4 displays the indirect and total effects of percentage of married households. Not surprisingly, no evidence of mediation is found here considering that the p-value for the indirect effect was not significant and in the opposite direction (b = 1.01; p < 0.60) from the total effect. Overall, the findings from Table 4 offer support for our third hypothesis but not our second or fourth. These findings also explain why immigration curtails violence—immigrant/ethnic organizations hold the key.

Table 4. Mediation Analysis of the Relationship between Immigration and Violent Crime through Ethnic Firms, Immigrant/Ethnic Organizations, and Married Households.

	I	Model 1: Ethnic Firm	s	Immig	Model 2: rant/Ethni		Model 3: Married Households			
Indirect effect	-1.72		(1.73)	-8.70	*	(3.72)	1.01		(1.93)	
Total effect	-13.35	†	(7.93)	-13.35	†	(7.93)	-13.35	†	(7.93)	

Note: All models include dummy variables for each MSA. N = 417 observations. Standard errors in parentheses. * p < 0.05 + p < 0.10 (two-tailed tests).

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10. Discussion

The link between immigration and crime has long been dominated by myths and stereotypes [7]. This perception reverberates today as a large proportion of the American public and even some political officials continue to associate immigration with criminality, lawlessness, and social disorder [67]. Yet, empirical scholarship overwhelmingly illustrates that immigration is associated with less, not more violence [4,5]. Indeed, this finding has been so well documented in the prior literature that the notion that "'immigration reduces crime' has become the new conventional wisdom" [68] (p. 5). In line with this point, scholars have advanced the *immigration revitalization perspective* to explain why immigration revitalizes communities and decreases crime [10].

Unfortunately, almost all prior tests of the macro-level effects of immigration on crime are direct and do not consider the intervening processes that explain this association [5]. This omission represents an important knowledge gap in our understanding of the impacts of immigration on crime considering that every theoretical position on the matter, including the *immigration revitalization perspective*, argues that the relationship between immigration and crime is indirect [13]. Against this backdrop, the goal of the present study was to shine light on the immigration–crime nexus by examining three intervening factors that are consistent with the *immigration revitalization perspective*—percentage of married households, ethnic firms, immigrant-serving organizations. To test these mediating factors, we drew on data from several sources to examine the association between immigration and violent crime rates for 139 MSAs between 2000 and 2019. In the discussion below, we reiterate our most important findings, as well as their implications for theory and future research.

The first finding is that within-MSA increases in immigration were associated with decreases in violent crime rates over the study period, which is consistent with our first hypothesis and prior research [13]. It is also important to note that most MSAs are continuing to experience a decrease in crime as a result of immigration, even though foreign-born growth in the United States has slowed over the past decade [1]. The second and most important finding in this study is that immigrant/ethnic organizations mediate much of the total effect between immigration and crime—approximately 65%. As explained earlier, voluntary organizations and non-profits serve many critical roles for both immigrants and their communities. For immigrants, organizations provide newcomers with access to resources and services (e.g., healthcare, legal services, and employment) that promote integration, human capital, and upward mobility [17]. Immigrant organizations also strengthen communities by serving as a gathering space for residents to meet and interact, providing prosocial programming to youth, and facilitating connections between the neighborhood and government entities [44].

This suggests that the ability for immigrants to reduce crime is largely dependent on the strength and quality of the non-profit base in the community. These organizations can serve as a mechanism for informal social control by integrating new immigrants into the community's social network and facilitating prosocial attachments [17]. Our results also align with Shihadeh and Winters' finding that the presence of Catholic institutions in new destinations serve as a protective factor against violence for Latinos [43]. The institutions captured by our immigrant/ethnic organizations mediator likely anchor the community by informally promoting compliance with prosocial norms and values among residents, which suppress crime [14,35].

In light of these results, it is clear that expanding the number of social service providers in the community is essential for reducing crime. This position is not limited to immigration. Research in other fields such as prisoner reentry and community gun violence have highlighted the important role that non-profit agencies have for reducing recidivism and firearm-related injuries and deaths [69–71]. In the context of this study, one way of promoting immigrant/ethnic organizations, especially in ethnic enclaves, is by having cities institute policies that focus on welcoming and integrating immigrants into the community. Majka and Longazel's case study of Dayton, OH documents how the city's immigrant-friendly policy led to an increase in resources and social service providers (e.g., education,

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healthcare) for Dayton's foreign-born population and strengthened relationships between immigrant communities and the police and local officials [72]. Other studies show that anti-immigration laws heighten citizen fear and distrust, and lead to a decline in business revenue, use of public services, and higher rates of crime [73–76]. To this point, Lyons and colleagues' work found that the inverse relationship between immigration and crime was stronger (i.e., greater crime-reducing effect) across neighborhoods situated within cities that are politically receptive to immigrants [45]. Taken together, city-level policies that focus on the inclusion and incorporation of immigrant groups can play a key role in promoting immigrant-oriented agencies and non-profits—a key deterrent of crime. ¹⁰

Most notably, our results offer some support for the *immigration revitalization perspective*. Even for the two mediating measures that did not affect violent crime—ethnic firms and the proportion of households headed by married couples—immigration was still a significant predictor of both, which is consistent with the *immigration revitalization perspective*. Thus, our findings demonstrate that immigration benefits the community in other ways aside from thwarting crime, namely, by strengthening ethnic businesses and two-parent household structures. Moving forward, we call on scholars to continue to investigate whether ethnic businesses, immigrant/ethnic organizations, and/or familial structures mediate the link between immigration and crime, especially across smaller aggregates (e.g., census tracts). Some research has already been conducted that analyzes the possible intervening role of these factors on the immigration–crime nexus, but more work is needed to assess the validity of the *immigration revitalization thesis* or other theoretical frameworks [15,17]. Certainly, testing and evaluating these mechanisms will not solve all the critical questions remaining in this line of literature, but it would represent a significant leap forward in advancing our understanding of why immigration suppresses crime.

While our study makes an important contribution to the literature, it must be interpreted within the context of the study's limitations. First, it is possible that our results may be affected by problems with causal ordering or endogeneity (i.e., immigrants are attracted to places with less crime). This is an issue that has been discussed in prior research, but studies have generally found little support for reverse causation [4,33]. Second, while our findings show that immigrant/ethnic organizations account for a large proportion of the effect of immigration on crime, we did not assess which types of agencies or non-profits are most important. The Urban Institute does distinguish each agency by type of organization according to their NTEE code and provides the longitudinal and latitudinal coordinates to examine the relationship between voluntary organizations and crime at smaller aggregates.

Further, while our study represents the first test of the *immigration revitalization perspective*, it does so using data at the MSA level (even though this perspective is widely regarded as a neighborhood-level theory). Unfortunately, data limitations for our ethnic businesses measure prevented us from conducting this study using smaller aggregates. One alternative is to use business data from Reference USA. These data have been used in prior research on immigration and crime and provide business information for various ethnic groups at smaller aggregates such as the census tract [17,42]. It is also important to highlight that macro-level relationships may differ depending on the unit of analysis [77]. In other words, it is possible that the indirect effect of immigrant/ethnic organizations on immigration and violent crime is null when using other spatial scales (e.g., block group, county). This process could also apply to the other mediating measures. That is, ethnic firms and/or percent of households headed by married couples may mediate the effect between immigration and violent crime when examining other macro-level units.

Another limitation is the potential for sample bias for the MSAs included in the analyses. As noted above, approximately 76 MSAs had to be omitted because they were missing information on the number of Hispanic- or Asian-owned firms in the U.S. Census' Survey of Business Owners (SBO) for 2002 and/or the U.S. Census' Annual Business Survey (ABS) for 2018 (another 33 MSAs were missing crime data). These omitted cases were also different than the MSAs retained in the sample in that the former had substantially smaller total and foreign-born populations and less violence. Despite these differences,

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supplemental analyses revealed that immigrant/ethnic organizations still mediated a substantial proportion of the total effect (41%) between percent foreign-born and violent crime rates when the 76 MSAs with missing ethnic firms data were included in the models (results available upon request). Finally, it is important to note that our findings are only limited to violent crime. We analyzed violent crime rates in this study because that is what most prior studies examine and because violent offenses are more likely to be reported to the police and included in the UCR [5]. Still, future research should assess whether our findings apply to property-related offenses considering that there is evidence to show that ethnic businesses and immigrant/ethnic organizations are associated with lower property crime rates [15,60].

In conclusion, the abundance of studies published over the past twenty years have underscored the numerous benefits associated with immigration, including reductions in crime and violence. While important, this work is limited to just direct effects (i.e., effect of immigration on crime) and provides little understanding for why immigration decreases crime [5]. To alleviate this gap, our study tested whether ethnic businesses, immigrant/ethnic organizations, and percentage of married households mediate the link between immigration and crime. Our results show that immigrant/ethnic organizations mediate a substantial proportion of the effect of immigration on crime and offers some support for the *immigration revitalization perspective*.

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Notes

- Forty-two percent of respondents also stated that immigration makes the tax situation in the United States worse, but another 20% respondents believed that immigrants have a positive impact on taxes or make it better (Gallup, 2019). Thus, more respondents believed that immigrants make a positive contribution to taxes as opposed to crime rates.
- The primary reason for selecting MSAs as the unit of analysis is that this was the smallest level of aggregation available for our ethnic business measure. Data for all other variables are available at units smaller than the MSA.
- Most of the missingness stemmed from omitted information on the number of ethnic businesses (76 MSAs total). For these MSAs, the U.S. Census Bureau did not publish counts on the number of Hispanic- or Asian-owned firms in the Survey of Business Owners (SBO) 2002 or the Annual Business Survey (ABS) 2018 due to unreliable estimates or privacy and confidentiality concerns. Certainly, an argument can be made for whether omitting these cases results in sample bias. A t-test analyzing the difference in means for percent foreign-born between those MSAs retained in the study (10.1%) versus those removed (4.7%) found that there is a significant difference (t = 12.0; p < 0.001). This difference is not surprising, considering that the datasets used to compute the number of ethnic-owned businesses are estimates and are less likely to be reported for MSAs with smaller populations and fewer numbers of immigrants. At the same time, those cases removed from our study had significantly lower violent crime rates (372.4) than those retained (461.8) in the sample (t = 5.6; p < 0.001). We discuss the issue of sample bias further in the conclusion section. Finally, another 33 MSAs were missing violent crime data for at least one wave, which is an issue that has been documented in other studies [29].
- Another reason for excluding rape in our operational definition of violent crime is that the UCR stopped tracking the original or "legacy" definition of rape in 2017, making earlier crime counts incomparable with more recent data.
- This finding only applies to uniform measures of immigration. Studies that disaggregate the foreign-born by race/ethnicity or nationality tend to find differing results regarding the impact of immigration on crime [42,57].
- Ownership refers to those who have more than 50% of stock or equity in the business and both firms with and without employees.

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The Annual Business Survey (ABS) replaced the Survey of Business Owners (SBO) in 2017. Before this period, the SBO conducted its study every five years. The SBO did release figures on the race/ethnicity of business owners in 2012, but these estimates are only available at the national level.

- Preacher and Hayes recommend bootstrapping be used to compute the standard errors when estimating the indirect effects in mediation analyses to account for non-normality [65]. We attempted to bootstrap the standard errors in our models using bias-corrected and accelerated confidence intervals. However, the models would not converge with the ID or MSA dummy variables included in the model. When we removed the ID variables from our models and computed the bootstrap standard errors, the coefficients were identical to those yielded with the cluster option, but the standard errors were consistently smaller. Thus, the findings we report here are likely conservative estimates (i.e., more likely to accept the null hypothesis due to larger standard errors).
- We re-ran our analysis using random-effects models and found that the percentage of married households was significantly and negatively associated with violent crime rates. In addition, including this measure in the model reduced the coefficient for percent-foreign-born by nearly half, which provides some preliminary evidence for mediation. Thus, between-MSA differences or random-effects models reveal that percentage of married households may mediate the link between immigration and crime.
- While our results advocate for city-level policies that favor and welcome the integration of immigrants into the community, the implication is that these initiatives will lead to an increase in social service providers that assist newcomers with employment, healthcare, education, and housing. Additionally, these service providers should be socially proximate to where immigrants settle to maximize their use.

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