Consumer Behavior in Ethnic Enclaves: Does Co-ethnic Density Reduce Consumer Spending?

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Abstract

Though sociological research on immigrant enclaves and co-ethnic spatial homogeneity is rife with analyses on how associated conditions affect entrepreneurship, research on these phenomena from the consumer's perspective is lacking. Because consumers make up a larger proportion of the population inhabiting areas often described as enclaves, and are responsible for the success or failure of local enclave businesses as well as the flow of local revenue, an analysis of enclave consumers is warranted. This paper purports to bridge the gap between research on immigrant entrepreneurs, which often relies heavily on variations of the enclave thesis and theories of concentrated wealth and poverty, with research on consumers, particularly with regards to established theories on consumer ethnocentrism and consumer acculturation. Using the 1995-2015 Current Population Survey, we test the effect of co-ethnic immigrant density on degrees of consumer spending per week on food. Focusing specifically on Mexican immigrants and East Asian immigrants, who each make up a significant portion of the foreign-born population, our results indicate that an increase in co-ethnic density significantly corresponded to a decrease in weekly spending for Mexicans, but an increase in spending for East Asians. The implications of these findings are discussed.

Keywords: enclave effect; food consumption; ethnic density; consumer ethnocentrism

INTRODUCTION

Research on immigration has shown a general tendency for newcomers to leave their countries of origin in groups, become neighbors, and seek employment in the same firms, often working the same kinds of jobs (Waldinger & Der-Martirosian, 2001). Thus, where a demand for immigrant labor arises, populations of co-ethnics start to form, later serving as mediators for subsequent migrants as they speak a common language and are often socially connected to these new arrivals. Coming from a unique cultural background, a demand presumably emerges for goods and services provided in their language and conducive to their culturally specific tastes, paving the way for savvy co-ethnic immigrant entrepreneurs who understand their culture and exactly how to cater to it (Light & Gold, 2000).

Research on immigrant entrepreneurs in ethnic enclaves is vast and the debate over whether starting a business in an enclave of co-ethnics benefits entrepreneurs has continually occupied researchers' minds for over three decades without a clear resolution (Wilson & Portes, 1980; Bailey & Waldinger, 1991). Though the enclave effect on local economies has been examined from many angles, there have been very few studies on the role consumers play or how certain conditions in the enclaves benefit or hinder their participation. Considering the degree to which most businesses rely on consumers, a thorough understanding of ethnic markets requires further research on consumer behavior. This paper aims to strengthen the link between research on ethnic markets and ethnic consumers by testing the relationship between co-ethnic immigrant density and weekly spending habits.

Drawing from a well-established body of literature on consumer acculturation, which refers to the ways in which consumers from a minority group adapt to the "consumer culture" of a dominant group (Peñaloza, 1994), and consumer ethnocentrism (CE), which explores the

extent to which consumer behavior patterns result from a preferential bias toward products associated with a particular ethnic "ingroup" (Sharma, Shimp, & Shin, 1995), this paper aims to expose the fissures in immigrant entrepreneur research and to fill the gaps these studies have left behind. It is argued that previous entrepreneur-based formulations made implicit assumptions about the extent to which consumers experience acculturation and CE for the principles of these theoretical models to work.

Specifically, we focus on three theories related to immigrant economic behavior. The first is the *enclave thesis*, which argues that high concentrations of the same ethnic consumer group provide a net benefit to immigrant businesses due to the culturally specific nature of the products immigrant businesses make (Light, 1972; Wilson & Portes, 1980). As the co-ethnic population increases, so does the demand for goods reminiscent of their homeland, specifically the kinds of goods the host country does not typically produce. We argue that these economic demands are conditional upon low levels of consumer acculturation (Berry, 1980; 1997) and a high levels of consumer ethnocentrism (Sharma et al., 1995), but that enclave confinement can reinforce these tendencies. The second theory is the *concentrated disadvantages* argument, which refers to the manner in which clusters of impoverished people living within the same spatial area can hinder business success due to limitations on the amount they can purchase or consume (Fairchild, 2008). This thesis is often contrasted with its opposite, which is the third theory observed in this study. The theory of *concentrated advantages*, asserts that a high proportion of privileged individuals in a given area contribute positively to local business success as their socioeconomic advantages allow them the freedom consume more. To allow for a clear contrast between concentrated disadvantages and concentrated advantages, Mexican immigrants were analyzed alongside East Asian immigrants as previous studies have determined the former to have the

lowest incomes of all immigrant groups and the latter to have the highest average incomes (Hong, Zhang, & Walton, 2014).

To examine how the consumption behaviors change as co-ethnic immigrant density increases across metropolitan areas in the United States, we estimate a series of regression models using the Integrated Public Use Microdata Series Current Population Survey (IPUMS-CPS) (Flood, King, Ruggles, & Warren, 2017). Our results show that as Mexican immigrant density increases, weekly spending for co-ethnic groups decreases, but the opposite effect is observed for East Asians. That is, as East Asian co-ethnic density increases, weekly spending for East Asians also increases. We argue that these results are consistent with past studies from the entrepreneur angle which found essentially no enclave benefit for Mexican businesses (Aguilera, 2009) and positive benefits for Asian ones (Zhou & Cho, 2010).

LITERATURE REVIEW

The Enclave Effect

The enclave effect is generally understood as a privileged benefit that immigrant-owned businesses enjoy when they operate in areas of high co-ethnic density (Wilson & Portes, 1980; Bailey & Waldinger, 1991). Given a co-ethnic clientele heavily concentrated in the same geographical area with similar values, religious beliefs, and tastes combined with a common primary language, which is usually not English, a sense of ethnic solidarity presumably emerges (Pessar, 1995), granting ethnic businesses that establish themselves in these areas exclusive access to this pool of customers due to the uniqueness of their goods and services, which cannot easily be replicated by host country entrepreneurs (Light, 1972). When these business owners are

of the same ethnic origin as the clientele, they also are privy to knowledge of these culturally specific demands, whereas mainstream U.S. entrepreneurs have limited access to such knowledge.

Protected from outside competition, the demand for these specialized goods and services in ethnic enclaves theoretically increases, allowing firms more of an opportunity to extract higher rents for their wares, assuming there is still a large enough customer base willing to pay higher prices and that internal competition within the enclave is minimal (Shinnar, Aguilera, & Lyons, 2011). Thus, entrepreneurs theoretically benefit from a competitive advantage due to the niche market providing their consumer base. Co-ethnic workers also arguably benefit as businesses form that provide services similar to those of their native countries which require skills these workers previously acquired before emigrating, thereby allowing them to work and interact with employers in their native languages (Xie & Gough, 2011). When living outside the enclaves, immigrants who lack the vocational skills needed to compete with host country citizens in the mainstream labor market often find themselves having to accept low paying jobs in the secondary labor market which offers few opportunities for human capital building or upward social mobility (Bailey & Waldinger, 1991). Thus, living in the enclaves and working for co-ethnic firms is often seen as an alternative for immigrants hoping to earn a livable income. Increased earnings among the working population in an enclave translates into more disposable income that could be spent in the enclave firms, thereby providing an additional benefit to enclave entrepreneurs.

The enclave thesis gained a strong initial wave of popularity in the wake of Wilson and Portes' (1980) influential article which reviewed longitudinal data on Miami's Cuban refugees from 1973 to 1976. According to their research, Cubans living in Miami at the time tended to

live in clusters. Entrepreneurs often hired co-ethnics to work for their firms, and workers living in the enclave fared better financially than Cubans working in the secondary market in the U.S. mainstream labor force. Portes and Bach (1985) later expanded on this thesis, emphasizing the role of ethnic solidarity to explain why immigrants fared better working for co-ethnic bosses in the enclaves than for Anglo American bosses in the primary and secondary labor markets. The assumption was that co-ethnic bosses would feel more connected to their employees and therefore more likely offer them opportunities for advancement and human capital building over time, and employees would reciprocate by displaying greater loyalty, even when the initial working conditions for newcomers might prove unsatisfactory (Kim, 1999).

Attempts to replicate these findings, especially in studies of other immigrant groups besides Cubans, who are typically viewed as a relatively middle-class immigrant group (Waldinger & Der-Martirosian, 2001), have resulted in mixed conclusions, some only partially supporting the enclave thesis and others outright rejecting it. Arguably the best-known critique of the enclave thesis comes from Sanders and Nee's (1987) article, which compared Chinese immigrants in California to Cubans in Florida, determining that the supposed enclave effect was disproportionately more beneficial for bosses than for employees. Subsequent, nuanced studies have also shown that the specific ways in which working in the enclave can benefit an immigrant group can vary by race, gender, or culture (Zhou & Logan, 1989). For instance, in her ethnographic studies on South Asian women, Pallavi Banerjee (2013) found that institutionalized patriarchy in an immigrant group's country of origin can transfer to ethnic firms formed in the United States, creating a segmented work environment that places structural barriers on women earning higher wages. These cultural differences in patriarchy might explain some of the inconsistencies in the degree by which enclaves benefit workers.

The extent to which immigrant bosses prefer to hire workers of the same national origin can also vary from group to group, suggesting possible variance in the degree of a particular group's ethnic solidarity, at least in a firm's hiring practices. The Iranian-dominated neighborhoods in Los Angeles serve as a vivid example in that Iranian-owned firms seldom employ Iranian workers (Light, Sabagh, Bozorgmehr, & Der-Marirosian, 1994). Often viewed as a "middleman group," due to their reliance on Anglo American suppliers and native-born minority customers, researchers also point to Korean immigrants living in California as an exception due to the relatively low frequency in which Korean firm owners hire co-ethnics as employees (Min, 1996). These immigrant groups tend to report higher rates of self-employment than most others, leading some researchers to conclude that the relatively low number of co-ethnic subordinate employees is due to a lack of applicants as they turn their ambitions more to entrepreneurship (Waldinger & Der-Martirosian, 2001). Defenders of the enclave thesis sometimes counter these criticisms by claiming that the enclave thesis only works with a sizeable population of co-ethnics, arguing that these exceptional cases do not qualify as enclaves at all because they do not sufficiently meet this criterion (Portes, 1995).

Consumer Ethnocentrism and Acculturation

The idea that entrepreneurs in a protected niche market benefit from the culture-specific demands of local co-ethnics relates to a concept called consumer ethnocentrism (CE) (Sharma et al., 1995; Zolfagharian, Saldivar, & Sun, 2014), which emphasizes a consumer's bias and high appraisal of a product based on its relevance to his or her ingroup, which would generally refer to an immigrant's home country or culture in the case of enclave studies. An immigrant scoring high on consumer ethnocentrism would prefer products from his or her home country, thus an entrepreneur in an ethnic niche market would theoretically try to cater to that demand. Therefore,

for the central premise of the enclave thesis to work, substantial amounts of CE are necessary to generate the enclave-specific benefit to co-ethnic entrepreneurs.

Researchers have found that the extent to which a given immigrant group shows signs of consumer ethnocentrism vary based on numerous factors. Immigrants who come from countries widely perceived as collectivist, generally referring to the global south, tend to score higher on CE scales than those who come from countries deemed individualistic such as most countries in North America and Western Europe (Sharma et al., 1995). Conservative and patriotic worldviews also often correlate positively with CE, whereas factors such as income and education tend to be negative predictors (Watson & Wright, 2000). With the rising impact of globalization, an immigrant's identity with an ingroup is also becoming more complex and harder to flesh out. As global mobility and interconnectedness via technology have made intercultural marriages more common than before, immigrants sometimes find themselves identifying with multiple outgroups simultaneously (Rockquemore & Brunsma, 2002). For instance, in their study of Mexican immigrants, Zolfagharian and Sun (2010) found that both native-born Anglo Americans and foreign-born Mexican immigrants displayed higher tendencies toward CE than U.S.-born Mexicans whom they defined as "bicultural" because they reportedly identified with both cultures. Bicultural, by contrast, tended to appraise the quality of a product more objectively or favored products from countries they believed to be more industrialized under the assumption that development in a country equated to higher manufacturing quality (Tse & Gorn, 1993). Acharya and Elliott (2003), likewise, find that more ethnocentric consumers tend to prefer products associate with their particular ingroup whereas less ethnocentric consumers have a country-of-origin (COO) bias toward products from developed nations.

For a protected niche ethic market to attract a consumer base of co-ethnics seeking goods associated with their culture of origin and derive a privileged benefit in the form of rent extraction, specific conditions related to the consumers' acculturation (Shoham, Segev, & Gavish, 2017) need to be met. Derived from the anthropological term, *acculturation* (Gordon, 1964), consumer acculturation refers to the knowledge and skills shaping consumer behavior in a multicultural context (Peñaloza, 1989). Exposure to a particular consumer culture fosters behavioral learning which reinforces the value a consumer places on certain products (Peñaloza, 1994). However, given the multicultural context that characterizes many US cities, exposure to multiple consumer cultures at the same time is also quite common, creating a variety of possible outcomes in one's consumer acculturation (Kymlicka, 1995;Watchravesringkan, 2010).

John Berry (1980;1997) identified four acculturation strategies, which have often been applied to research on immigrant consumers facing a multitude of learning possibilities. The first is *assimilation*, which occurs when a member of a non-dominant immigrant group abandons his or her original consumer culture to fully embrace that of the dominant group, typically referring to Anglo Americans in the US context. On the opposite end of the spectrum, *separation* occurs when an immigrant consumer opts to fully maintain his or her original consumer culture with minimal interaction or consumer learning from the dominant culture. The third strategy Berry identifies, which he calls *integration*, is more common among bicultural immigrants and members of the 1.5 generation who arrived in their host country at a young age (Kim, Brenner, Liang, & Asay, 2003). Integration involves maintaining a certain amount of one's original consumer culture, while also adopting elements of one or more others. Finally, the fourth strategy is *marginalization*, which involves both a separation from one's original culture and minimal interest or identity in the dominant consumer culture. Marginalization is often the result

of forced assimilation and separation from one's original culture, removing much of the agency associated with acculturation strategies.

Because the enclave effect assumes a demand for ethnic goods (Logan, Alba, & McNulty, 1994). which allows co-ethnic entrepreneurs to extract rents, a hypothesis based on the enclave thesis would predict immigrant populations, when living in homogenous clusters of co-ethnics, would tend to favor a strategy of separation from the dominant group over assimilation into the dominant group's consumer culture. This sense of separation would thereby generate a bias favoring ethnic goods over domestic goods associated with the host country. Likewise, if the enclave effect reinforces separation in consumer behavior, it would also predict minimal interaction in general with the dominant group and optimal interaction with co-ethnics.

Returning once again to the research question at hand, which is how co-ethnic density affects consumer spending among Mexican and East Asian immigrant populations, it would appear to follow from previous enclave studies that in both groups higher levels of co-ethnic density would generate an increased demand for ethnic goods that would allow entrepreneurs to extract greater rents, due to implied separation and high levels of CE. Thus, higher prices in the ethnic market would become indicative of ethnic homogeneity. From this argument, the following hypotheses can be derived:

H1: As co-ethnic density increases for Mexican immigrants, the amount of money Mexican immigrant consumers spend on groceries per week will increase.

H2: As East Asian immigrant co-ethnic density increases, the amount spent per week on groceries for East Asian immigrants will also increase.

Concentrated Advantages and Disadvantages

In the way exposure to co-ethnics perpetuates learned patterns of consumer behavior in a consumer culture, previous research on immigrant and minority enclaves have found evidence that wealth and poverty can also contaminate a clustered society of co-ethnics (Fairchild, 2008). From a purely economic perspective, high concentrations of wealth correspond to a greater flow of revenue across a neighborhood, making local business prospects appear more attractive to entrepreneurs who are counting on a consumer base with the available income to purchase their wares (Fischer & Massey, 2000). Highly concentrated poverty, on the other hand, harms local businesses, not only due to diminished resources in the hands of a poorer clientele, but from elevated levels of crime often associated with concentrated poverty, driving away potential consumers who would prefer to shop in areas they deem safe (Aguilera, 2009).

Examining Los Angeles County, an area known for extremely high levels of Mexican immigrant co-ethnic density, Trevizo and Lopez (2016) found that neighborhood segregation and poverty hurt local businesses as well as the community in that they had minimal resources for innovation, few peers from whom to borrow money, and had limited contact with affluent people who could serve as social ties to a more lucrative vocational network (Granovetter, 1995). Likewise, in a study on Mexican enclaves in Texas and California, Aguilera (2009) found that when the proportion of Mexican entrepreneurs as a percentage of the overall population of the self-employed increased, income from self-employment in these same areas tended to decrease. Applying the same regression model to Cubans in Florida, he found no significant relationship between density of co-ethnic entrepreneurs and their corresponding incomes. The results suggest the effect of Mexican co-ethnic homogeneity poses a penalty to entrepreneurs that is not universal across ethnic groups.

High concentrations of poverty not only limit resource availability in a particular area, but can also have lasting side effects that serve to perpetuate poverty. For instance, an area with highly concentrated poverty tends to have substandard public schools, poorly preparing students for college or vocational training, making it harder to develop or mobilize the kinds of human capital needed to rise above poverty (Crane, 1991; Johnson, 2013). Constant exposure to substandard education can also create a cultural attitude that devalues education, resulting in high dropout rates, and juvenile delinquency (Anyon, 1997).

When human capital is cultivated in the enclaves, it is not always transferable to the primary or secondary market outside of the enclaves. For instance, in a study on Chinese immigrant women in New York's Chinatown, Margaret Chin (2013) found that those who worked for the garment factory, a niche business commonly associated with the Chinese at the time of her study, developed skills only relevant to that niche. In the wake of the 2008 economic crisis, which resulted in mass layoffs in that industry, many who were forced to look elsewhere for employment struggled in transferring their skills to what was required of them in the secondary labor market. English language mastery is another necessary skill that becomes harder to acquire when living and working in the enclaves, as many have very minimal contact with mainstream English-speaking communities (Kossoudji, 1988).

In Kwong's (1997) research on undocumented Chinese immigrants living in New York's Chinatown, he found that increases in the undocumented population with every wave of new arrivals related to wages dropping in the Chinese enclaves. Without documentation, newcomers had very little bargaining power to demand raises and their choice of alternate jobs was more limited than those of authorized immigrants, forcing them even more to accept the low wages offered to them. Real wages for undocumented Mexican immigrants has likewise declined

consistently over several years. Massey and Gentsch (2014) argue that this decline has resulted not only from the weaker bargaining power associated with being undocumented and the sharp rise in the Mexican immigrant population after the Immigration Reform and Control Act of 1986, but by the socially mandated bigotry and discrimination against Mexicans that has steadily increased due to popularly held beliefs that undocumented immigrants are taking away American jobs.

In some cases, immigrant groups self-select into ethnic enclaves, not for the financial reward they hope to gain, but simply to escape racial discrimination and bigotry (Cao, 2003). Thus, even if living in the enclave might pose a penalty, some may still be making a calculated decision that the cost is worth the comfort of being around kindred spirits who share the same language and values. Furthermore, finding a job in the primary or secondary sector can be more difficult for some immigrant groups simply by virtue of institutional racism preventing prospective employers from hiring immigrant workers (Greene, 1997). Thus, self-selection into the enclaves might sometimes be the result of necessity.

Just as concentrated poverty can have a lasting negative effect that perpetuates poverty and stifles upward mobility, concentrated wealth can also have a net positive effect on local residents. For one, developers often seek to build new facilities, businesses, and housing units in more affluent areas, anticipating a higher return on their investment as wealthier community members can afford to channel their resources into these goods and services (Keating, 1988). Greater wealth also means higher tax revenues for local governments, who are then better able to provide public services like education and infrastructure (Fernandez & Rogerson, 1996).

Since the 1970s, neighborhoods have grown increasingly segregated based on race and income (Massey, 1996), possibly multiplying the effects of concentrated advantages and

disadvantages while minimizing contact between the two classes. Long term exposure to poverty or wealth can also affect a person's outward behavior. In her studies on working and middle-class children, Lareau (2011) found that children from poorer households developed a sense of restraint that negatively affected how they performed in school and subsequently how they approached the work force later in life. Likewise, she found that children from a wealthier upbringing developed a sense of entitlement, which resulted in higher school performance and a greater sense of self-efficacy. These learned behaviors via exposure to others in one's environment make change more difficult, and increased segregation between classes could make transcending poverty even more arduous as children from poor households have even less exposure to adult role models who might help them develop the necessary skills to later achieve vocational success.

As a general rule, economists tend to agree that consumer spending habits depend on current and expected future income (Garner, 1988). The greater one's sense of financial security, the more comfortable he or she is in spending. Likewise, greater uncertainty with the future more often results in fiscal constraint (Modigliani & Brumberg, 1954). Figures from the U.S. Census Bureau (2016) indicate a per annual capita income of $21,792 for Mexicans and $40,231 for East Asians, suggesting the latter group is much more likely to view portions of their income as disposable. In a comparative study of Latinos and Asians, Hong, Zhang, and Walton (2011) also found that higher levels of co-ethnic density negatively predicted Latino incomes and positively predicted Asian incomes, further supporting the notions of advantages and disadvantages as contagious and suggesting that co-ethnic density affects incomes. Based on this review of the literature, the following additional hypotheses can be predicted:

H3: As co-ethnic density for Mexican immigrants increases, weekly spending on food will decrease, ceteris paribus.

H4: As East Asian co-ethnic density increases, weekly spending on food will increase, ceteris paribus.

METHODS

Data

Purporting to measure the effect of co-ethnic density on Mexican immigrants' food spending habits, this study uses data from the Integrated Public Use Microdata Series-Current Population Survey (IPUMS CPS). This data set was chosen because it allows for analysis at the household level and has variables for household level purchasing, specifically on food for the family. Households were chosen as the unit of analysis because consumption of goods is significantly shaped by numerous household dynamics that would be overlooked in a simple analysis of individuals. However, to maximize the sample size, all available data in the United States across 435 metropolitan areas was used, totaling 107,300 households from the years 1996 to 2015. This span of years was of particular interest because those were the years IPUMS CPS implemented the Food Security Supplement (FSS), which included a continuous variable for the usual weekly amount spent on food per household. Because consumer behavior was the crux of this research and food is one of the few items that all consumers will inevitably have to purchase, it was assumed that all respondents will have some available data of having bought food each week and could therefore be justly compared across ethnic lines.

Though Mexican immigrants were the focus of this investigation, the sample size included all racial and ethnic groups measured by the IPUMS CPS in order to properly contextualize the phenomena of interest among Mexican immigrants in reference to others. East Asian immigrants were chosen as a comparative group for which to run parallel versions of the OLS models developed to analyze the effects of co-ethnic Mexican immigrant density on weekly food spending as growth in immigration rates and entrepreneurship rivals that of Hispanic immigrants (Kang, 2010).

Using variables for race, country of birth, and immigration status, the sample was divided into nine groups including non-Hispanic whites, non-Hispanic African Americans, U.S.-born Hispanics, Mexican immigrants, foreign-born Hispanics (excluding Mexican immigrants), U.S.-born Asians, East Asian immigrants, foreign-born Asians (excluding East Asian immigrants), and all other survey participants who are either of mixed, other, or ambiguous origins.

Dependent Variable

Reported estimates for the usual amount spent on food per week was used as a measure for consumer behavior and therefore designated as the dependent variable. Because food is a necessity and therefore must be consumed by all groups regardless of national origin, race, or income, it allowed for analysis at all levels. As the reported amount spent per week on food was reported in actual dollars, values for the variable were log transformed due to the tendency for standard dollar amounts to skew.

Key Independent Variable: Ethnic Population Density

Because both the enclave thesis and theories of concentrated advantages and disadvantages rely on immigrant co-ethnic density for their predicted effects to work, ethnic

population density was chosen as the main independent variable in this study. Population density can be measured in a variety of ways including the share of an ethnic group's concentration as a proportion of the total population (Hjerm & Nagayoshi, 2011), or the concentration of a particular ethnic group within a given geographical area (Havekes et al. 2014). The former is most common in sociology, but was also chosen because this study aims to contextualize the impact of Mexican immigrant density on consumer spending in the framework of society as a whole. Measures of an ethnic group's concentration relative to the total population tells a greater tale of how that group's numbers in a given metropolitan area compare to other groups in that same area. Measures of concentration in a defined geographical area only consider the group being measured but not its size compared to other groups in that same geographical area. Therefore, this study used the proportion of a given immigrant group to all other groups within each metropolitan area as its measure for co-ethnic immigrant density.

Individual Level Control Variables

Past research has shown marriage to significantly impact spending habits. For instance, Hawk (2011) found that married couples spent less per capita on food than singles. He also found that married couples are more likely to own homes, invest in insurance, and earn 25% more per capita. Because households are the unit of analysis in this study rather than individuals within households, marriage was still expected to have a positive effect as it corresponds to a larger household population and thus a greater need for food supplies. However, based on Hawk's findings, marriage would not be expected to affect the overall results in the same way another adult roommate or family member would. Because IPUMS CPS has available data for the number of adult siblings in the household, that variable was also included as it was presumed to make a difference.

Food expenditures are clearly an integral component of child rearing, but the extent to which children impact food spending depends significantly on the parents' income and level of education (Kornrich & Furstenberg, 2013) and the children's ages (Lino et al. 2017). Research shows that expenditures are expected to increase as the child gets older. Therefore, this analysis not only included the number of children as a control variable, but the number of children older than 5 years. Income and education level were also included.

Though an increase in family size would intuitively suggest an increase in spending as the number of mouths that must be fed increase, the possibility that an extensive increase in family size might also eventually bring about numerous confounding factors such as adult children in the household starting to contribute to the family income, outside assistance from extended family, or any number of other variables was considered. For this reason, a curvilinear tendency was anticipated, so both family size and its quadratic were included as control variables.

The probability of children living in the household was expected to increase with age up to a certain point, eventually reversing its trajectory as participants reached a point in which whatever children were living in the household had grown up and left home. As such, the head of household's age is a likely predictor of how many individuals reside in the house and therefore need food. For these reasons, age and its quadratic were included.

County Level Control Variables

Population size is predicted to affect spending for a variety of reasons including the tendency for higher numbers of consumers to generate demand, thus more businesses and more competition between businesses. However, the impact of population size on prices and

competition depends heavily on income levels in a given metropolitan area, which are in turn affected by a number of factors specific to that metropolitan area (Li, 1996). Therefore, along with population size and its quadratic, mean income per metropolitan area was included in the analysis.

Because cost of living varies by region as does settlement patterns of various immigrant groups (Cornelius, 1981), region was believed to possibly impact the outcome of the relationship between immigrant density and log spending. Therefore, Models 3 and 4 controlled for region. Citizenship status was also included as a control variable.

In addition to these group level variables, we control for Simpson's diversity index. Originally developed for biologists as a means of measuring diversity among organisms in natural habitats, Simpson's Diversity Index measures the probability that two cases selected at random would be from the same category in a given sample (Simpson, 1949; McLaughlin, McLaughlin, McLaughlin, & White, 2016). It is important to note that an area with low diversity does not necessarily mean the area is predominantly white. An area homogeneously populated by any given minority group would also receive a low score on Simpson's Diversity Index, thus diverse areas were not necessarily expected to have high densities for any particular immigrant group. It was included as a control variable to determine whether or not it mattered in the relationship between co-ethnic density and food spending.

EMPIRICAL RESULTS

Descriptive statistics for the nine comparative ethnic and racial groups are provided in Table 1, including figures for the dependent variable (log weekly spending on groceries) as well

as key independent variables. Once transformed into conventional dollar amounts, the differences in weekly spending on food across groups are stark. The three groups that reported spending the most were the three Asian groups, which included native-born Asians, East Asian immigrants, and a third category which included all Asian immigrants other than East Asians. Of the three Hispanic groups, Mexican immigrants reported spending substantially more per week than US-born Hispanics and foreign-born non-Mexican Hispanics. All Hispanic and all Asian groups demonstrated higher weekly spending habits than whites or African Americans.

Higher spending habits coincided with higher incomes for the Asian groups. East Asian immigrants were the only respondents with a lower yearly income than whites, but the difference amounted to little more than $1,000 per year. Mexican immigrants had the lowest income of all nine groups at $31,605, which was disproportionate to the weekly amount spent on groceries by comparison to other groups.

Aside from having the lowest family income, Mexican immigrants also had the least amount of schooling, the largest average family size per household, the lowest rate of U.S. citizenship, and had the youngest heads of household. Mexican immigrant heads of household ranked second only to non-East Asian immigrants in likelihood to be married.

On the other end of the spectrum, East Asian immigrants had the highest level of education out of the nine groups at an average of 14.8 years of schooling. Their likelihood of being naturalized citizens was approximately 57%, which was the second lowest of the nine groups.

Table 2 represents the general findings from the analysis using an OLS regression model without control variables. In this model, log weekly spending on groceries serves as the

dependent variable. Model 1 designates Mexican immigrant density per metropolitan area as the main independent variable and uses interaction variables with each of the nine racial and ethnic groups to isolate its unique effect on each group. The effect of Mexican immigrant density on Mexican immigrants when its effect is held equal for all other groups is of particular interest. This model suggests that the relationship is approximately -.008, which is significant at all conventional levels given the sample size. Thus, food spending for Mexican immigrants tends to decrease by 0.8% as the density of Mexican immigrant population increases by 1% point in a metropolitan area. A similar trend can be observed with native-born Hispanics, but the negative effect is weaker at about -.003 and is only significant at the 95% confidence level. For whites and African Americans, the effect of Mexican immigrant density was significantly positive, suggesting those two groups tend to spend more in areas of high Mexican immigrant density. The effect was negative for East Asian immigrants at the 95% confidence level and insignificant for all other Asian groups.

Model 2 in Table 2 explores the effect of East Asian immigrant density on the nine groups. In the absence of control variables, the effect of East Asian immigrant density on East Asians is insignificant at all conventional levels, but is positive for whites, African Americans, native-born Hispanics, and other groups. In the sample, East Asian immigrant density was never higher than 7.6%, whereas it reached as high as 57.7% for Mexican immigrants. Even considering the larger sample size of Mexican immigrant respondents in the dataset, the maximum density level for East Asian immigrants as a proportion of their total sample size was less than that of Mexican immigrants. This finding suggests that East Asian immigrants are less likely than their Mexican counterparts to settle into areas with high concentrations of co-ethnics, which is consistent with previous studies claiming that East Asian entrepreneurs are more likely

to have a clientele base of mixed ethnic groups than their African American and Hispanic counterparts (Portes & Rumbaut, 2006; Shinnar, Aguilera & Lyons, 2011).

Table 3 factors in a number of control variables to Models 1 and 2. Model 3 thus corresponds to the effect of Mexican immigrant density on log weekly spending on groceries with control variables taken into account. Likewise, Model 4 analyzes the effect of East Asian immigrant density on log weekly spending with these same control variables added.

Similar to the results of Model 1, the effect of Mexican immigrant density on log spending for Mexican immigrants is significantly negative at all conventional confidence levels in Model 3. However, the effect decreases slightly from the results of Model 1, suggesting that the control variables explain some of the relationship. With the control variables added, the results predict that for every 1% increase in Mexican immigrant density, log spending decreases by about .5%. Log spending for Native-born Hispanics and non-Mexican Hispanic immigrants also showed a decrease from the effect of Mexican immigrant density, but the effects were smaller and less significant. This relationship is possibly due to other Hispanic groups often living within close spatial proximity to Mexican immigrants, increasing the chance of forming social ties and sharing experiences (Tienda, 1991; Enchautegui, 1997).

In the case of East Asians, the effect of East Asian immigrant density on log spending becomes positive at the 95% confidence level when the control variables are added in Model 4. These findings suggest that when all else is assumed equal, for every 1% increase in East Asian immigrant density, log spending for East Asians will also increase by approximately 1.7%.

Models 3 and 4 both suggest that the effects of marriage, family size, years of education, and the mean log-transformed income of each respondent's respective metropolitan area are

positive in relation to log spending. Likewise, the number of children in the household over the age of 5 and the number of adult siblings in the household have a negative effect on log spending for both Mexican and East Asian immigrants as co-ethnic density increases. The reasons behind this phenomenon are not completely clear from the data at hand, but could perhaps be explained by further studies on the cultural differences between each ethnic group on the childhood experience and the differing roles each group places on children as members of the household.

For both Models 3 and 4, log family income and log population have a u-shaped curvilinear effect on log spending. That is, family income and population size show an initial negative effect on log spending, as indicated by the negative coefficients for log family income and log population. However, the positive values for the quadratic coefficients log family income-squared and log population-squared suggest that at a certain point, the trends reverse, and the variables begin to have a positive effect on log spending. Thus, as population initially increases, food spending decreases, but this trend reverses when after the population reaches a certain reflection point.

For family size, the curvilinear regression follows an inverted u-shaped trajectory, suggesting that family size initially has a positive effect on log spending, but the trend eventually reverses. Once family size reaches the reflection point, as it continues to increase by one unit, log spending decreases by 1.8% for Mexican immigrants and 1.8% for East Asian immigrants.

On the aggregate, the results of these models suggest that the effect of co-ethnic immigrant density affects consumer behavior even when controlling for other potentially confounding variables such as income, family size, marital status, age, education, and geographical characteristics such as mean income per metropolitan area. These findings support the theories of concentrated disadvantages and concentrated advantage, but also suggest that

something other than what can be quantified and accounted for in a statistical model is affecting both Mexican and East Asian immigrant consumer behavior. In terms of the enclave effect, the results of this study suggest that living in the enclaves offers a possible benefit to Mexican immigrant consumers, so much as the amount of money they spend on food, even if this benefit to the consumers comes at a cost to entrepreneurs operating in the same enclave. As for East Asian immigrants living in areas populated by a high proportion of co-ethnics, the results suggest that such an arrangement contributes to an increase in food spending. Though the positive effect for East Asian immigrants was not as significant as the negative effect for Mexican immigrants, living in enclave areas appears to impose a penalty to East Asian consumers, possibly explaining why East Asian immigrant density never exceeded 7.6% in this dataset, yet Mexican immigrant density reached as high as 57.7%.

A robustness check was also performed in which metropolitan areas that reported zero percent co-ethnic density for Mexican immigrants and East Asian immigrants were removed and the regression models were repeated. The results of the robustness check were not significantly different from the original results that included these areas.

DISCUSSION AND CONCLUSION

Though the enclave thesis, at face value, might seem to generally predict that an increase in co-ethnic density would result in greater entrepreneurial success, a net economic benefit for immigrants living in the enclave, and therefore an increase in consumer spending, research on the enclave effect has demonstrated its inconsistency across immigrant groups (Andersson, Burgess, & Lane, 2009), sometimes arguing that it benefits bosses more than workers (Sanders &

Nee, 1987). This finding has forced the theory's architects to revise it and attempt to flesh out the conditions necessary for it to work (Portes, 1995). However, despite these nuanced approaches, consumer behavior as a factor has gone virtually ignored in the literature.

The empirical results of this study showed limited support for a consumer-focused enclave thesis, which would have predicted that as co-ethnic density increases, spending also increases due to the rising demand for culturally specific goods. Instead, we found this relationship only tends to hold true for East Asian immigrants after controlling for confounding variables such as household income, family size, marital status, and characteristics regarding respective metropolitan areas and regions. Mexican immigrants, on the other hand, tended to spend less in areas of higher co-ethnic density. These findings are consistent with past immigrant enclave research that found co-ethnic density to have a negative effect on Mexican self-employment, and a generally positive effect on East Asian businesses, suggesting that business success in the enclaves depends at least in part in the ability to extract rents from consumers.

Though these findings suggest enclaves are not ideal locations for Mexican entrepreneurs to start businesses, they might partially explain why Mexican immigrants rationalize living in these areas. Along with the benefits of having a community of co-ethnics with shared experiences and who are more likely to sympathize with their needs, exhibit similar cultural tastes, and speak a common language, there appear to also be cost saving benefits regarding food, even at a penalty to enclave businesses. Whether or not this trend holds for other basic living necessities merits further research.

By comparison, the effect of co-ethnic density for East Asian immigrants on consumer spending was positive after controlling for potentially confounding variables. These results lend credence to the idea that East Asian immigrant entrepreneurs are able to extract higher rents from

their consumer base due to the specialty of the goods they produce, the difficulty mainstream U.S. markets have in reproducing comparable items, and their consumer base's financial means to pay the higher prices. It might be worth considering, however, that in our sample, East Asian immigrant density never exceeded 7% in any metropolitan area, whereas it surpassed 50% in the most heavily Mexican populated areas, suggesting that an oversaturation of businesses might also play a role in weakening Mexican entrepreneurs' abilities to extract rents from consumers.

At face value, the empirical results would appear to support the concentrated advantages and disadvantages arguments for both groups. A broad look at the dataset suggests that by comparison to East Asian immigrants, Mexicans have substantially lower incomes, less education, and are less likely to hold citizenship status, all of which place them at a disadvantage in that these factors act as structural barriers making it more difficult to build human capital or mobilize it (Mincer, 1974). It is worth noting, however, the broad variation in advantages and disadvantages among East Asian immigrant populations compared to Mexican immigrants. For instance, although East Asian immigrants had considerably higher average annual household incomes than Mexican immigrants, nearly 25% of the East Asian immigrants in this sample still had family incomes below $20,000 per year. Income varied much less for Mexican immigrants. Thus, popular assumptions about East Asian immigrants being advantaged by comparison to Mexican immigrants are only partially true, according to our data.

This research adds a new dynamic to the literature on the effect of co-ethnic density among immigrant populations. Along with past studies on how enclaves affect entrepreneurs and wage earners, our results suggest they also affect consumer behavior. Particularly, the findings presented in this study suggest immigrants can potentially benefit from living among co-ethnics at a cost to entrepreneurs, which is what we found for Mexicans. However, our analysis of East

Asian immigrants suggests the reverse can also be true, thereby benefitting businesses while potentially imposing a penalty on consumers. The extent to which these patterns are consistent across other forms of consumption, the degree to which culture, patriarchy, ethnic solidarity, or attitudes of the host society toward the immigrant groups in question play a role are beyond the reach of this study. For a fuller understanding of why these differences occur, a series of deeper, more specific, and more nuanced studies are needed.

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Table 1. Descriptive Statistics for Heads of Household

	White	African American	US-born Hispanics	US-born Asians	Mexican Imm.	Other Hispanic Imm.	E. Asian Imm.	Other Asian Imm.	All Other Groups
Log Spending	4.5	4.3	4.5	4.6	4.6	4.5	4.6	4.6	4.6
Spending (dollars)	113.1	91.9	116.3	130.7	122.3	114.6	126.2	130.5	119.9
Demographic Characteristics									
Family size	2.4	2.4	3.0	2.6	3.9	3.0	2.6	3.3	2.6
Family income (dollars)	63,049	37,579	47,885	81,290	31,605	39,331	62,017	74,735	57,203
Married (%)	56.4	30.5	48.9	52.2	66.6	52.0	63.4	72.1	49.4
Age	50.6	48.3	41.3	47.9	41.1	46.7	47.6	44.3	45.4
Mean Years of Education	13.9	12.8	12.7	14.7	9.2	11.5	14.8	14.5	13.7
Citizenship (%)	98.2	95.9	100.0	100.0	32.1	59.3	56.8	61.2	89.9
Region (%)									
Northeast	23.9	17.6	13.0	8.2	3.3	40.1	24.7	18.2	11.4
South	29.2	52.5	31.6	11.6	25.2	38.8	18.0	22.9	25.3
Midwest	24.9	20.4	8.6	5.6	11.1	4.0	8.2	14.5	16.3
West	22.0	9.5	46.8	74.6	60.4	17.1	49.1	44.4	47.0
(Total)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)
Sample Size	79,172	11,642	4,278	783	3,180	3,124	1,147	1,874	2,100

Density (%)	Mean	Min	Max	Variance
Mexican	3.0	0.0	57.7	28.8
E. Asian	1.1	0.0	7.6	2.3

Table 2. Estimated Effects of Co-ethnic Density on Log Spending

	Model 1 Mexican Immigrant Density	Model 2 East Asian Immigrant Density
Race (Ref = White)		
Non-Hisp. African Americans	-.2606*** (.0073)	-.2550*** (.0073)
Native-born Hispanics	.0091 (.0130)	.0217 (.0130)
Native-born Asians	-.0016 (.0266)	.0991*** (.0260)
Mexican Immigrants	.1338*** (.0173)	.1578*** (.0172)
Other Hispanic Immigrants	-.0425*** (.0133)	-.0236 (.0133)
East Asian Immigrants	.0372 (.0230)	.0961*** (.0228)
Other Asian Immigrants	.0994*** (.0179)	.1319*** (.0178)
Other Groups	.0001 (.0162)	.0342* (.0161)
Density*White	.0037*** (.0007)	.0031 (.0041)
Density*Non-Hisp Afrn Americans	.0009 (.0017)	.0007 (.0044)
Density*Native-born Hispanics	-.0028* (.0012)	-.0067 (.0040)
Density*Native-born Asians	-.0006 (.0052)	-.0085 (.0066)
Density*Mexican Immigrants	-.0076*** (.0012)	-.0112** (.0043)
Density*Other Hispanic Immigrants	-.0039* (.0019)	-.0030 (.0034)
Density*East Asian Immigrants	-.0099** (.0032)	-.0110* (.0052)
Density*Other Asian Immigrants	-.0007 (.0028)	-.0019 (.0050)
Density*Other Groups	.0050 (.0027)	.0013 (.0047)
Constant	4.4849*** (.0030)	4.5010*** (.0124)
Adj. *R*-squared	.0184	.0155

Notes: N = 107,300. Standard errors in parentheses

* < 0.05, ** <0.01, *** < 0.001 (two-tailed tests)

Table 3. Estimated Effects of Co-ethnic Density on Log Spending with Control Variables

	Model 3 Mexican Immigrant Density	Model 4 East Asian Immigrant Density
Race (Ref = White)		
Non-Hisp. African Americans	-.1170*** (.0073)	-.1119*** (.0083)
Native-born Hispanics	.0062 (.0129)	-.0175 (.0126)
Native-born Asians	-.0003 (.0261)	-.0672 (.0396)
Mexican Immigrants	.0998*** (.0184)	.0575*** (.0168)
Other Hispanic Immigrants	.0116 (.0132)	.0162 (.0160)
East Asian Immigrants	.0362 (.0236)	-.0159 (.0319)
Other Asian Immigrants	-.0828*** (.0190)	-.0806*** (.0209)
Other Groups	.0261 (.0161)	.0009 (.0177)
Density*White	.0044*** (.0006)	.0213*** (.0019)
Density*Non-Hisp Afrn Americans	.0015 (.0015)	.0057 (.0048)
Density*Native-born Hispanics	-.0027** (.0010)	.0068 (.0054)
Density*Native-born Asians	-.0040 (.0044)	.0153* (.0076)
Density*Mexican Immigrants	-.0051*** (.0010)	.0056 (.0053)
Density*Other Hispanic Immigrants	-.0014 (.0015)	.0026 (.0064)
Density*East Asian Immigrants	-.0021 (.0027)	.0173* (.0081)
Density*Other Asian Immigrants	-.0007 (.0024)	.0031 (.0065)
Density*Other Groups	.0007 (.0023)	.0175*** (.0053)
Control Variables		
Marital Status	.0396*** (.0055)	.0401*** (.0055)
Number of Children	-.0215*** (.0042)	-.0217*** (.0042)
Num. Children Over Age 5	-.0808***	-.0804***

	(.0049)	(.0049)
Num. Adult Sib. in Household	-.0479**	-.0480**
	(.0159)	(.0159)
Log Family Income	-.7145***	-.7028***
	(.0287)	(.0287)
Log Family Income-squared	.0441***	.0434***
	(.0014)	(.0014)
Family Size	.2896***	.2906***
	(.0058)	(.0058)
Family Size-squared	-.0176***	-.0177***
	(.0006)	(.0006)
Years of Education	.0086***	.0085***
	(.0007)	(.0007)
Log Population	-.0838***	-.0537*
	(.0244)	(.0247)
Log Population-squared	.0032***	.0021*
	(.0009)	(.0009)
Age	.0059***	.0059***
	(.0007)	(.0007)
Age-squared	-.0001***	-.0001***
	(.0000)	(.0000)
Citizenship Status	-.0033	.0002
	(.0095)	(.0095)
Log Mean Income of Metro. Area	.0786***	.0783***
	(.0046)	(.0046)
Simpson's Diversity Index	.0000	.0001
	(.0000)	(.0000)
Region (Ref = West)		
Northeast	-.0205**	-.0225***
	(.0066)	(.0060)
Midwest	-.0695***	-.0585***
	(.0062)	(.0061)
South	-.0301***	-.0232***
	(.0057)	(.0056)
Constant	6.0797***	5.8182***
	(.2345)	(.2359)
Adj. *R*-squared	.3016	.3019

Notes: N = 107,300. Standard errors in parentheses

* < 0.05, ** <0.01, *** < 0.001 (two-tailed tests)