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Impact of Ethnic and Cultural Diversity on Millennial Living Preferences and Homeownership

Yi Wu[1], Alan Tidwell[2], Vivek Sah[3]

Abstract:

Purpose –In this study, we examine living preference and tenure among millennials, with a particular focus on the impact of ethnic and cultural diversity on housing outcomes including observed homeownership inequalities.

Design/methodology/approach – Using the individual panel data from three waves in American Housing Survey, 2015-2019, this study compares the likelihood of co-residing among Asian and Hispanic millennials with non-Hispanic White millennial peers. Furthermore, this study estimates the effect of co-residence on homeownership across generational and ethnic backgrounds.

Findings – We find a preference for coresident adult familial households among foreign-born Asian and Hispanic millennials, and U.S-born Hispanic millennials when compared to their non-Hispanic White millennial peers. The results are robust after considering neighborhood selection bias, affordability, and education. The effect of co-residence on ownership is significant and positive, suggesting this living arrangement contributes to homeownership across all generational and ethnic groups.

Originality/Value –This study provides a more comprehensive understanding of the role ethnic and cultural diversity has on millennial adult living preferences and its generational

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differences, which is not just 'boomeranging' as identified by previous literature, contributing to the growing interest in the housing research on the effect of ethnic diversity and culture on millennials' homeownership rates.

Practical implications- Housebuilders should be aware of Asian and Hispanic millennials' increased appetite for extended family living arrangements and consider increasing the physical size of affordable or workforce-oriented rental housing and new single-family construction to accommodate more adult co-living arrangements.

Key words: Millennials, Co-residence, Homeownership, Generational differences, Asian, Hispanic

JEL Code: J10; R21; R23

Introduction

Millennials, those born between 1981 and 1996, now account for nearly a quarter of the American population, having recently surpassed Baby Boomers as the most populous generation. While many Millennials are entering their prime house-buying years, they have significantly less financial wealth than previous generations at the same age and have been slower in purchasing a house, and forming their own households.[4] According to Bialik and Fry (2019), 15% of millennials lived in their parents' house in 2018, which is significantly higher than the 8% share of Boomers (born between 1946 and 1964) and Silents (born between 1928 and 1945) at the same age. Gen Xers (born between 1965 and 1980) formed households earlier as well, with only about 6% living in their parents' house at the same age.

[4] Pew Research Center. (2019, January 17). Defining generations: Where Millennials end and Generation Z begins. See website: http://www.pewresearch.org/fact-tank/2019/01/17/where-Millennials-end-and-generation-z-begins/ and Pew Research Center, See Website: https://www.pewsocialtrends.org/essay/millennial-life-how-young-adulthood-today-compares-with-prior-generations/

Indeed, the homeownership rate among households headed by people aged 25 to 34 has declined from roughly 55 percent in 1980 to 47 percent in 2000, and 39 percent in 2015. (Frey, 2018). Nevertheless, the American dream of owning a house is still alive among millennials, with 75% reporting it as a long-term goal (Demand Institute, 2014). This study focuses on ethnic and cultural diversity of the millennial generation as an antecedent for preferences influencing living arrangement and housing outcomes.

Millennials struggle to enter the housing market for a variety of reasons, including higher housing costs, challenging labor markets, student debt, and increased social acceptance of co-residence, etc.; therefore, they often remain in their parents' household longer in a co-residing living arrangement (Paciorek, 2016; Matsudaira, 2016; Bleemer, Brown, Lee, and Van der Klaauw, 2017; Dettling and Hsu, 2018; Chan, O'Regan, and You, 2021). Pilkauskas, Amorim and Dunifon (2020) examine co-residence behavior, citing that racial and ethnic differences are a more recent phenomena and find co-residence households vary within racial and ethnic groups. In 2016, 29 percent of Asian and 27 percent of Hispanic millennials in the U.S. lived in multigenerational familial households, compared to only 16 percent of non-Hispanic White millennials.[5] The decrease in the average dissimilarity index across urban areas suggest that the largest housing markets in the U.S. are more diverse, and a more robust understanding of ethnic and cultural attitudes can help improve community integration (Carrillo and Rothbaum, 2021).

In addition to very real economic challenges,[6] there is often an overlooked ethnic and cultural aspect which our study considers that in many ways differentiates millennials from prior

5 Source: Pew Research Center Analysis of 2009 and 2016 American Community Surveys

[6] The U.S. Case-Shiller house price to median income ratio generally remained between 4 and 5 (higher values indicate lower affordability) from 1960 to 2001, but since then the ratio has increased substantially. During the height of the housing bubble that led to the financial crisis, housing affordability reached a low in 2005 with a ratio of 7. This ratio dipped to just under 5 in 2012 but quickly increased again to an all-time recorded high of around 8 in 2022, indicating the lowest level of housing affordability recorded.

generations. It is well documented that millennials are more racially and ethnically diverse than preceding generations. Hispanic and Asians are predicted to make up the majority of the 16.1 million net new households that are anticipated between 2020 and 2040, according to Goodman and Zhu (2021). The increase in ethnic diversity among millennials is largely influenced by Latino/Hispanic and Asian immigration, resulting in 30% of all millennials being classified as "new minorities" (Frey, 2016). Many Asian and Hispanic millennials are either first-generation (Asian 56% and Hispanic 36%) or second-generation (Asian 36% and Hispanic 34%), according to Frey (2018). Hispanics and Asian Americans make up half of adult second generation, which is expected to keep increasing in the future.[7] This study aims to compare differences between Hispanic millennials and Asian millennials in housing market.

Notably income is an important factor shaping minorities housing preferences and thus explain the persistent gap of White-minority homeownership (Wachter and Megbolugbe, 1992; Gabriel and Rosenthal, 2005; Cortes, Herbert, Wilson, and Clay, 2007; Hilber and Liu, 2008; Wolff, 2022). The homeownership gap originated for several reasons: 1) minority households generally have lower permanent incomes than White households (Acolin, Lin, and Wachter, 2019; Akbar, Hickly, Shertzer, and Walsh, 2022) due to barriers to employment opportunities (Bates, Bradford, and Seamans, 2018) or immigration status (Davies and Wooton, 1992); 2) minority households have fewer savings to secure a down payment often required when purchasing a house (Bostic and Lee, 2008; Stegman and Loftin, 2021); 3) and, they are less likely to benefit from intergenerational wealth accumulation and transfers (Xavier, 2021; Derenoncourt, Kim, Kuhn, and Schularick, 2022).

Aside from economic circumstances, as noted previously, many Asian and Latino countries

[7] Source: Second-Generation Americans, Pew Research Center, 2013

exhibit a proclivity towards co-residence between adult children and parents, along with collective values that emphasize the importance of multigenerational family roles and responsibilities (Sarkisian and Gerstel, 2012; Burr, Mutchler, and Gerst-Emerson, 2013; Wu, Sah, and Tidwell, 2018; and Albertini, Mantovani, and Gasperoni, 2019; Wu, Bian, Xue and Zhang, 2021). This is consistent with the previous finding that immigrants to the US often decide to share resources across multigenerational households (Pfeiffer, Wong, Ong, and De La Cruz-Viesca, 2017). The centrality of family to Asian and Hispanic cultures reflects a shared collectivist emphasis on the paramount role of family as a valued in-group and potential source of social support (Triandis, Bontempo, Villareal, Asai, and Lucca, 1988). There are three primary types of extended family household formation that explain the racial and ethnic differences in co-residence patterns: downward-extended household, upward-extended households and horizontal-extended households. Non-Hispanic Whites are significantly less likely to form any types of co-residence than racial and ethnic minorities (Kamo, 2000). Cultural factors, such as traditional familial responsibilities, play an important role in both Asian and Hispanic family because they rely on extended family networks (Kamo, 2000).This inclination for extended family households is currently shaping millennial household formations and homeownership among Asian and Hispanic ethnicity relative to non-Hispanic Whites. In this study, we explore whether the native family culture in a real estate context with Asian and Hispanic millennials is persistent in the host country, i.e., the U.S.

We contend that the considerable increase in the ethnic and cultural diversity of millennials and the cultural differences that goes along with it can help explain some of the observed millennial housing consumption delays and surge in adult extended familial households among millennials (see, for example, Goldscheider and Goldscheider, 1994; Boyd, 2000; Mitchell *et al*., 2004). It is evident that Hispanic family size has increased since 2013 from

around 2.38 people aged 18 and over in families to 2.52 as shown in Figure 1, which corresponds to previous literature (Hall, Musick and Yi, 2019). Considering the differences in cultural heritage among Asian and Hispanic ethnicity, and non-Hispanic Whites (Vega, 1995; Kamo, 2000), we test for differences in extended family household living arrangements. Using non-Hispanic Whites as a reference group, our main focus is comparing foreign-born Asian and Hispanic millennials with U.S-born Asian and Hispanic millennials who were raised in a culture other than their ethnic country. We find that co-resident behavior is significantly more common among foreign-born Asian and Hispanic millennials than among non-Hispanic White millennials [8] and U.S. born Asian millennials.However, U.S-born Hispanic millennials are more likely to hold on to the traditional extended family living arrangement. The effect of co-residence on ownership is significant and positive, suggesting millennials that co-residence are more likely to purchase a house than their peers that do not. These observed differences in adult extended family households and house ownership rates are only partially explained by the social/contextual environment, economics, affordability, or education, for both foreign-born and U.S-born Asian and Hispanic ethnicity.

[Insert Figure 1 about Here]

This study is a timely investigation into the relationship between housing behavior and culture as Asian and Hispanic ethnic group increasing purchasing power and demand for residential real estate are sure to shape U.S. overall housing demand. Millennials' housing tenure and formation choices have changed markedly relative to preceding generations, but relatively few studies have addressed the influence of ethnic and cultural heritage on house ownership rates and housing choices despite the heightened relevance for millennials.[9] Our

[8] Race and Ethnic categories are defined according to 1997 Office of Management and Budget (OMB) standards on race and ethnicity, which guides the United States Census Bureau.

[9] According to the National Association of Realtors (NAR, 2018), housing consumption by millennials constitutes the majority (65%) of first-time house owners, and this age-group represents the largest cohort of house purchasers (36%).

results support the notion that culture and ethnicity is an important determinant for identifying potential adult co-residence households which is not just ‘boomeranging’ as identified by (Cooper and Luengo-Prado, 2018; Chan, O'Regan and You, 2021), and this behavior is an important consideration when examining millennials' house ownership rates.

Insights from this study provide a more comprehensive understanding of the role ethnic and cultural diversity has on millennial housing attitudes and demand, contributing to the growing interest in the housing literature on the effect of ethnic diversity and culture on living arrangements (Giuliano, 2007; Marcén and Morales, 2019) and homeownership (Adu-Gyamfi, 2020). It contributes to the growing literature from three important perspectives. First, to the best of our knowledge, this is the first study focusing on the Millennial Asian and Hispanic ethnic groups who have experienced the Great Recession and Foreclosure Crisis (Rugh and Massey, 2010; Massey, Rugh, Steil, and Albright, 2016) and became largest ethnic groups in the “new minorities” entering peak house purchasing age (Frey, 2016, 2018). Our results are novel in that they show similarities in co-residing living arrangements between foreign-born Asian and Hispanic millennial immigrants who share the same “familism” (Valenzuela and Dornbusch, 1994; Kamo, 2000; Sarkisian and Gerstel, 2012; Burr, *et al*, 2013; Wu, *et al*, 2018; Albertini, *et al*, 2019) and culture (see, Tienda, 1980; Triandis, *et al*, 1988; Vega, 1995; Wu, *et al*, 2021). Furthermore, we find interesting generational shifts for U.S-born Asian millennials who are not inclined to traditional family housing patterns. This observation is different from U.S-born Hispanic millennials who tend to maintain traditional familism co-residing in housing. Secondly, our study extends the previous literature focusing on the cultural impact on homeownership, such as the sibling effect (Wu, *et,al*, 2021), parent effect (Giuliano, 2007), partner effect (Marcén and Morales, 2019), trust (Fleck and Monninger, 2020), religion (Adu-Gyamfi, 2020) and social norms (McCabe, 2018). The co-residence living arrangement includes living with parents, adult kids, or other adult family

members (i.e., extended family household formation) motivates Asian and Hispanic Millennials to own a house in the U.S. This effect is significant even after controlling for widely used culture proxies, such as the proportion of homeowners in the country of origin (Marcén and Morales, 2020), and neighborhood characteristics (McCabe, 2018; Martinez and Aja, 2021). This result adds to the literatures that U.S-born Cubans (Martinez, 2021) and White Latinxs (Martinez and Aja, 2021) have a higher likelihood of owning their house in the U.S and they are more likely to be first-time buyers only if they are co-residing. Thirdly, this research corresponds to the research that after accounting for employment, personal income, education, marital status, gender and citizenship in a foreign country, country of origin still has a significant impact on homeownership (Mitchell *et al*., 1989; Mitchell *et al*., 2004; Flatau *et al*., 2007; Cahill and Franklin, 2013).

In the next section, we provide a description of the empirical models and data used to test our research questions. In the third section, we discuss the primary results and robustness checks. The fourth section discuss the impact of co-residence on millennial homeownership. At the end, we provide conclusions and policy implications regarding millennial household formation and homeownership.

Empirical Model and Data

Empirical Model

Between Group Estimations

We use logit model as shown in equation (1) to test same generation but different ethnic group co-resident behavior:

$$Co - residence_{it} = \alpha Asian_i + \beta Hispanic_i + \gamma Z + \eta L + \psi X + \varepsilon_{it} \qquad (1)$$

Where "co-residence" is a dummy variable indicates whether an individual *i* lives in an extended family household at year *t*. Specifically, that an adult individual is living with their

parents, adult kids or adult family members. The variables *Asian*, and *Hispanic* in the model are Asian and Hispanic ethnic millennial individuals, respectively, which use non-Hispanic White millennials as the reference group. Z represents the personal demographics matrix including the individual gender, marital status, age, education, income, employment, number of kids, and US Citizenship (Peters, 2020); L represents the personal locations matrix including house location. We use core-based statistical areas (CBSAs)[10] fixed effects which strips away unobserved factors common to individuals in the family's present metropolitan area. We also include the CBSA-by-year level fixed effects, which control for the fact that individuals might sort into areas with trends in local markets that also affect their living arrangement. X represents the control variables including housing cost, built environment (unit size), affordability ratio, house price growth rate, racial exposure index, and neighborhood characteristics matrix including neighborhood crime, school, public transportation, natural disasters, and neighborhood ratings (Kauppinen, Van Ham and Bernelius, 2020). Thus, α and β identifies whether Asian or Hispanic ethnic individual tend to be more co-resident oriented than the local non-Hispanic White population.

Within Group Estimations

Instead of testing foreign-born and U.S-born Asian and Hispanic individuals in one equation as in the previous section, we only include the same ethnic group but sort by the different country of birth cohorts as shown in equation (2). A comparison of coefficients α_1 and α_2 from equation (2) test for differences between foreign-born, and U.S-born millennials to

10 U.S. Office of Management and Budget (OMB) Core based statistical areas (CBSAs) in AHS. 35 Metropolitan Areas are New York-Newark-Jersey City, NY-NJ-PA, Los Angeles-Long Beach-Anaheim, CA, Chicago-Naperville-Elgin, IL-IN-WI, Dallas-Fort Worth-Arlington, TX, Philadelphia-Camden-Wilmington, PA-NJ-DE-MD, Houston-The Woodlands-Sugar Land, TX, Washington-Arlington-Alexandria, DC-VA-MD-WV, Miami-Fort Lauderdale-West Palm Beach, FL, Atlanta-Sandy Springs-Roswell, GA, Boston-Cambridge-Newton, MA-NH, San Francisco-Oakland-Hayward, CA, Detroit-Warren-Dearborn, MI, Riverside-San Bernardino-Ontario, CA, Phoenix-Mesa-Scottsdale, AZ, Seattle-Tacoma-Bellevue, WA, Cincinnati, OH-KY-IN, Cleveland-Elyria, OH, Denver-Aurora-Lakewood, CO, Kansas City, MO-KS, Milwaukee-Waukesha-West Allis, WI, Memphis, TN-MS-AR, New Orleans-Metairie, LA, Pittsburgh, PA, Portland-Vancouver-Hillsboro, OR-WA and Raleigh, NC. The geographic area identification is limited in the public-use AHS data.

examine whether culture identity still exists (Casey and Dustmann, 2010) or is changed because of social assimilation for U.S-born millennials who grew up and lived in the US.

$$Co - residence_{it} = \alpha_1 Foreign - born_i + \alpha_2 U.S - born_i + \gamma Z + \eta L + \psi X + \varepsilon_{it} \quad (2)$$

Where Z represents the personal demographics matrix, L represents the personal locations matrix and X represents the control variables including housing cost, built environment (unit size), affordability ratio, house price growth rate, racial exposure index, and neighborhood characteristics matrix, which are the same as equation (1).

Data

According to personal identifier which remains the same across survey years, we construct individual panel data from three waves in American Housing Survey (AHS) Public Use Micro-Data Sample (PUMS) (2015, 2017, and 2019). We only included individuals who are living in the same household continuously since 2015 until the latest interview year 2019.[11] Table 1 describes the variables and their sources. Co-residence indicator is equal to 1 if an individual 18 and over who is living with their parents, adult kids, or adult family members (i.e., extended family household).[12] The independent variables are indicator variables representing Asian origin only or Hispanic origin only ethnic group given the reference group of non-Hispanic Whites. Control variables include personal demographic variables, house characteristics, location characteristics and neighborhood features which are detailed in Table 1.

[Insert Table 1 about Here]

The sample is made up of 9,482 non-Hispanic White, 1,708 Asian, and 5,249 Hispanic/Latino

11 We did not include the recent survey year in 2021 due to the unexpected impact of pandemic on living arrangement and homeownership.

12 Due to the survey design of the American Housing Survey (AHS), the datasets did not record individual migration status. The co-residence is observed at the time point of survey each year.

millennials, as shown in Table 2, and is roughly evenly split by gender. Asian and Hispanic foreign-born millennial individuals are slightly older (median age 31) and more likely to be married than their U.S-born millennial peers (median age 27) and non-Hispanic White millennials (median age 30) counterparts. US-born Asian and Hispanic ethic millennial individuals are more likely to be homeowners than their foreign-born counterparts; however, they are not as likely to own as Non-Hispanic Whites. Asian and Hispanic U.S.- and Foreign-born millennials are more likely to co-reside in adult households than Non-Hispanic Whites. The median personal income for foreign-born Asian, and Hispanic millennial individual in our sample is $25,000 and $17,000, respectively. Income decreases to $17,000 and $12,000 for Asian-, and Hispanic- U.S-born millennial individuals; compared to a median personal income of $26,000 for non-Hispanic White millennials. Foreign-born employment rates for Asian and Hispanic millennial individuals are roughly the same, at just under 70%; and is similar for U.S-born employment for Asian Americans and Hispanic Americans but remains lower than non-Hispanic White millennial individuals (74%). Regarding educational achievement, Asian millennial individuals on average achieve the highest level of education, while foreign-born Hispanic millennials having the lowest education level. U.S-born Hispanic millennial individuals are more educated than their first-generation predecessors. Approximately 54% of foreign-born Asian millennial individuals are U.S. citizens, while only 29% of foreign-born Hispanic millennial individuals are U.S. citizens. There are a few disparities in perceptions of neighborhood quality between the millennial cohorts, although they are generally content with their communities (median rating 8 out of 10). The amount of serious and petty crime is perceived in a similar manner. School quality is viewed favorably in the communities by millennials with near equal ratings. Asian and Hispanic millennials give higher rankings for neighborhood public transportation than their non-Hispanic White counterparts.

[Insert Table 2 about Here]

Results

Co-residence of Millennials

As reported in Tables 3 and 4, the results indicate that both foreign-born Asian and Hispanic millennials are significantly more likely than their non-Hispanic White peers to co-reside in adult familial households.[13] After controlling for economic, demographic, house, and neighborhood covariates, foreign-born Asian and Hispanic millennials are around 11 to 13 percentage points more likely to co-reside than their non-Hispanic White millennial peers. U.S-born Asian Americans show no differences in co-residence compared with non-Hispanic Whites, and U.S-born Hispanic American millennials are only 8 percentage points more likely to co-reside than their non-Hispanic White millennial peers. These results partially support, in a housing context, the previous findings by Casey and Dustmann (2010) of intergenerational transmission of ethnic identity and culture. However, Asian Americans experienced more social assimilation in living culture and behaved different from their original ethnic group. Economically, on average, millennials with higher personal income, and those residing in areas with stronger house price appreciation are less likely to live in adult co-resident households. Millennial individuals with a bachelor's degree or higher are less likely than those without a bachelor's degree to co-reside in adult familial households. Millennials who live in areas with higher housing cost are more likely to co-reside in extended family households (Flatau, *et al*, 2007).[14] Further, millennials that co-reside in adult extended family households, demographically, are more likely to be single, employed,

[13] Sample size varies as the number of observations due to omitted variables in the less parsimonious models.
[14] Housing costs include mortgage, rent, utilities, property tax, property insurance, service fees, lot rent, and routine maintenance costs.

younger, and/or have kids under 6 years old. U.S. Citizenship status of foreign-born millennials does not affect the choice of being a co-resident. From a neighborhood and property perspective, millennial individuals are most likely to live in adult extended family households in areas with larger housing units locate and in higher-rated neighborhoods.

[Insert Table 3 about Here]

[Insert Table 4 about Here]

Next, we employ sample selection models to test for potential endogenous neighborhood sorting effects. The unobserved neighborhood-specific factors that influence a family's co-residence status. (Ottaviano and Peri, 2013). We use propensity score matching (PSM) to construct two similar "mover" subsamples[15] and compare co-residence behavior among millennial individuals with moves motivated by a desire to live in a "better" neighborhood with those who moved for other reasons.[16] Nearest neighborhood, kernel, radius, and spline matching are used to estimate the average treatment effect on the treated (ATT). As reported in Table 5, the ATT is statistically insignificant across models suggesting that individual neighborhood preferences do not seem to affect millennial individual co-residence decisions, i.e., those moving out of a desire for a "better" neighborhood do not co-reside at higher rates than millennials that move for other reasons. It confirms that our previous results of co-residence among Asian and Hispanic millennials are robust to these types of neighborhood sorting effects.

[Insert Table 5 about Here]

Heterogeneous Effects

To further explain potential channels for co-residence housing behavior among Millennials,

[15] The statistical differences in matched sample are included in Appendix Figure A.1, Table A.1 and Table A.2.
[16] Consequently, the comparable subsample of millennials co-residing can be attributed to a treatment effect, i.e., the neighborhood—rather than other observed covariates.

we investigate the heterogeneous effects of housing affordability and personal educational attainment.

Heterogeneous Effects of Co-residence Conditioned on Affordability

In this sub-section, we utilize the National Association of Realtors Housing Affordability Index (HAI) as a proxy for housing affordability.[17] We match the HAI of existing single-family houses to the CBSA area where the individual resides. Higher HAI means the area is more affordable. We created the interaction term of affordability ratio and ethnic indicator to test whether Asian or Hispanics that live in an affordable area will be less likely to co-reside compared with non-Hispanic Whites. As Table 6 shows, millennial individuals living in more affordable areas are significantly less likely to co-reside in adult familial households than their counterparts in less affordable areas. The main results of co-residence behavior among foreign-born Asian and Hispanic millennials are consistent with the findings from the baseline model as shown in Table 3. Although, it does not completely moderate the differences observed between non-Hispanic Whites and Asian/Hispanic millennial individuals, housing affordability does marginally account for some of the observed differences between Asian and Hispanic millennials exhibited in the previous models. The interaction term for foreign-born Asian Millennials is significant and negative, which means that foreign-born Asian Millennials will be less likely to co-reside if they live in an affordable area compared to non-Hispanic Whites.

[Insert Table 6 about Here]

Heterogeneous Effects of Co-residence Conditioned on Education

Next, we investigate the effect of education on adult co-resident living arrangements of

[17] See NAR website: https://www.nar.realtor/research-and-statistics/housing-statistics/housing-affordability-index

millennials by sorting them into two groups based on personal education attainment. Past studies (Lee, 2014; Albouy, Cho, and Shappo, 2021; Klaesson, Öner, and Pennerstorfer, 2021) have shown that immigrant social interaction affect international migrants' settlement status. Attending school is an important channel of social assimilation for minorities who are living in a culture other than their ethnicity, and social interaction with teachers and peers in school plays a significant role in developing their cognition. The education indicator variable equals "1" when it represents 'high-level education' (college, master, or doctoral degree), and "0" otherwise (no more than high school education). From the previous Table 2, we can find that Asian millennials achieve the highest education attainment, with more than 80% earning at least a college degree, followed by just 70% of non-Hispanic Whites. About 56% of U.S-born Hispanics achieve at least a college degree but only 29% of their foreign-born counterparts have a college degree. The interaction term of Asian or Hispanic ethnic indicator and the education indicator is employed to show the differences in co-residence between ethnic groups relative to non-Hispanic whites. As it is evident in Table 7, the level of education attainment decreases the probability of adult co-residency in millennial households. The results of the interaction term shows that Asian millennials choice of co-residence is more sensitive to education than Hispanic millennials.

[Insert Table 7 about Here]

Millennial Housing Tenure

For most individuals and families, part of the American Dream is to purchase a house.[18] However, a homeownership gap exists between millennials and previous generations, and

[18] See papers by Goodman (1988), Haurin, Hendershott and Wachter (1997), Bradley, Green, and Surette (2007) for a discussion of the financial, economic, and social factors influencing housing tenure.

within millennials between non-Hispanic White and minority and/or ethnic groups. Some, of the homeownership gap between millennial cohorts can be attributed to a wealth effect (Bucks, Kennickell and Moore, 2006; Xavier, 2021; Derenoncourt, *et al*, 2022), income effect (Acolin, *et al*, 2019; Akbar, *et al*, 2022) and/or discrimination (Turner, Ross, Galster, and Yinger, 2002; Ondrich, Ross and Yinger, 2003). In this section we investigate the effect Asian and Hispanic millennials' proclivity for co-residence has on house ownership with between and within group estimations.

In the between group estimates, the interaction term of co-residence and ethnic group in equation (3) is included in logit model to test for house ownership across the same generation, but different ethnic groups.

$$Home - Owner_{it} = \alpha_1 Asian_i \times Co - residence_{it} + \alpha_2 Hispanic_i \times Co - residence_{it} + \alpha_3 Co - residence_{it} + \alpha_4 Asian_i + \alpha_5 Hispanic_i + \gamma Z + \eta L + \psi X + \varepsilon_{it} \quad (3)$$

Homeowner is an indicator variable representing housing tenure (own or rent). Co-residence is an indicator that reflects an adult extended familial household. *Asian*, and *Hispanic* represent ethnicity of individuals. After controlling for economic, property, location, demographic, neighborhood characteristics and potential other cultural factors: homeownership of same racial groups (Marcén and Morales, 2020), the coefficients of the interaction term α_1 and α_2 measure co-residing Asian and Hispanic millennial individual proclivity to own relative to non-Hispanic White millennial individual that also co-reside in adult familial households.

Equation (4) is modified to test for the effect co-residence has on first time home buyers.

$$First - Timebuyer_{it} = \beta_1 Asian_i \times Co - residence_{it} + \beta_2 Hispanic_i \times Co - residence_{it} + \beta_3 Co - residence_{it} + \beta_4 Asian_i + \beta_5 Hispanic_i + \gamma Z + \eta L + \psi X + \varepsilon_{it} \quad (4)$$

Where, *First-Timebuyer* is an indicator with a value of "1" if homeowner is a first-time purchaser and 0 if not. The coefficient of the interaction term β_1 and β_2 indicates whether an Asian or Hispanics millennial individual that co-reside in adult familial households are more likley to be first-time buyers relative to non-Hispanic White resdients that co-reside in adult familial households.

In the within group estimations, instead of testing both foreign-born and U.S-born Asians and Hispanics in one equation as in the previous section, we only include the same ethnic group but sort by different cohorts according to the country of birth as shown in equation (5) to test the effect of intergenerational transmission of housing culture heritage on homeownership.

$$Home - Owner_{it} = \alpha_1 Foreign - Born_i \times Co - residence_{it} + \alpha_2 U.S - Born_i \times Co - residence_{it} + \alpha_3 Co - residence_{it} + \alpha_4 Foreign - Born_i + \alpha_5 U.S - Born_i + \gamma Z + \eta L + \psi X + \varepsilon_{it} \quad (5)$$

Similarly, equation (6) tests for the effect of co-residence has on first time house purchasers. The estimation model is shown as equation (6) below,

$$First - Timebuyer_{it} = \beta_1 Foreign - Born_i \times Co - residence_{it} + \beta_2 U.S - Born_i \times Co - residence_{it} + \beta_3 Co - residence_{it} + \beta_4 Foreign - Born_i + \beta_5 U.S - Born_i + \gamma Z + \eta L + \psi X + \varepsilon_{it} \quad (6)$$

Millennial Housing Tenure and Millennial Extended Family Households

The National Association of Realtors (NAR, 2018) contends that housing purchases by millennials represent the largest cohort of house purchasers (36%). In this section, we analyze the homeownership gap within millennial ethnic cohorts by focusing on the tendency for Asian and Hispanic millennials to co-reside in adult familial households and the effect this might have on housing tenure. Table 8 presents findings from models examining the effect co-residing has on housing tenure. The results show that foreign-born and U.S-born Asian millennial individuals are more likely to own a house than non-Hispanic White or Hispanic millennial individuals when accounting for adult co-residence and the other control variables

as previously described. This collectively corresponds to the findings from Painter, Yang and Yu (2003,2004) that Asian Americans have homeownership rates similar to those of non-Hispanic Whites. However, Hispanic or U.S-born Hispanic millennials are marginally less likely to own relative to non-Hispanic White millennial individuals. The effect of adult co-residence on ownership is significant and positive, suggesting this living arrangement contributes to homeownership across all generational and ethnic groups. These findings document generational and cultural differences in housing tenure for millennials, as U.S-born Asian millennials are most likely to own and co-residing increases the ownership rate for millennials. This points to the importance of ethnic and cultural diversity in the tenure transition rate (Goodstein, 2016). It also helps our understanding related to millennial homeownership rates (DeSilva and Elmelech,2012), that cultural expectations and preferences are playing a role in shaping the minority-non-Hispanic White homeownership gap and that this gap for millennials (at least) largely dissipates after controlling for personal, house, location, neighborhood characteristics and homeownership of same racial groups.

[Insert Table 8 about Here]

First-time Home Ownership and Millennial Extended Family Households

Housing consumption by millennials constitutes the majority (65%) of first-time house owners (NAR, 2018), because the age category, 25 to 40, is commonly associated with first-time house purchases (Myers and Painter,2000). We investigate first-time homeowners across ethnic and generational status and do not detect differences among millennial homeowners, both foreign-born and U.S-born Asians and Hispanics are similar with non-Hispanic Whites in the rate of first-time house purchasers. As shown in Table 9, adult extended family co-residence is less common among first-time homeowners compared to more seasoned homeowners; however, the interaction with co-residence is significant and positive for

foreign- and U.S-born Hispanic millennials, suggesting that Hispanic first-time homeowners are more likely than non-Hispanic Whites to co-reside in an adult familial household. While this is also the case for foreign-born Asian millennials respectively. It corresponds to the findings from Marcén and Morales (2020) that the interdependence among family members in home ownership is more prominent for foreign-born immigrants.

[Insert Table 9 about Here]

Conclusions and Implications

The ethnic diversity of millennials is reflected in household formations and homeownership rates as cultural norms continue to shape the "demographic bridge" (Frey, 2018) to America's future. In this study, we measure the impact and persistence of cultural and ethnic diversity on millennial adult extended family households and ownership by accounting for country of birth status and ethnicity. In doing so, we advance the scope of studies focusing on millennial household formation and tenure choices by linking them with important cultural preferences and normative family structures. Given the literature surrounding the "boomerang" generation (Cooper and Luengo-Prado, 2018; Chan, O'Regan and You, 2021), we contributes to the growing interest in the impact that ethnic diversity and culture have on housing choices and how these outcomes vary.

Employing individual panel data from the American Housing Survey (AHS) Public Use Micro-Data Sample (PUMS), we find adult extended family households are significantly more common among foreign-born Asian and Hispanic millennials, and U.S. born Hispanic millennials than their non-Hispanic White millennial peers. The proclivity to co-reside in an adult familial household is only partly conditioned on housing affordability and education. These findings correspond to the culture factor observed in previous literature (e.g., Giuliano,

2007; Marcén and Morales, 2018; McCabe, 2018; Adu-Gyamfi, 2020; Fleck and Monninger, 2020; Adu-Gyamfi, 2020; Wu, *et,al*, 2021). We also find that the effect of co-residence on ownership is significant and positive after considering housing affordability, demographics, neighborhood selection; implying that millennials who co-reside are more likely to purchase a house than their peers who do not. The results also show evidence of the closing of the homeownership gap between the ethnically diverse millennials. Further, cultural and generational differences are not consistently detected in the rates of first-time millennial house purchasers across U.S. born ethnic status.

Recognizing heterogeneity in housing preferences among the ethnically diverse millennial generation, along with their rising housing consumption, it is paramount to understand the cultural factors influencing millennial household formation and tenure in addition to economic factors, such as income (Stegman and Loftin, 2021; Akbar *et al*, 2022; Wolff, 2022), employment (Bates, *et al*, 2018) and wealth accumulation (Xavier, 2021; Derenoncourt *et al*, 2022). As millennial homeownership rates lag previous generations along with an increase in the proclivity among ethnically diverse millennials to co-reside in extended family households, new housing stock should be reflective of these realities. An understanding of millennial demographics and its differences in generations in a particular location coupled with an increased awareness of their living preferences can inform policy initiatives on issues such as expectations of household formations, and housing type preferences particularly related to workforce housing. Our findings contribute to a robust discussion of what housing policies can address the ethnic generational different needs in housing. Housebuilders should be aware of millennials' increased appetite for extended family living arrangements and consider increasing the physical size of affordable or workforce-oriented rental housing and new single-family construction to accommodate more adult co-living arrangements, which are more common in Asian and Hispanic families.

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