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ORIGINAL ARTICLE

Intergenerational Transmission of Culture Among Second-and-Higher Generation Immigrants: the Case of Age at First Birth and Nonmarital Childbirth

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Abstract
This paper uses immigration to investigate the intergenerational transmission of culture. The culture is proxied by nonmarital fertility and age at the first birth in the immigrant's home country. Using the Current Population Survey, Censuses, and American Community Survey data covering the years 1970–2020, we find that average outcomes in the home country can explain a statistically significant portion of immigrants' behavior. Furthermore, we rule out the influence of confounders by including a rich set of demographic and socioeconomic familial controls, other important home country characteristics, as well as state-by-year fixed effects. We find that a one-percentage-point increase in nonmarital fertility rate in the mother's country of birth is associated with an 8.7 basis-point increase in the likelihood of nonmarital birth among second-generation women. Similarly, a one-year increase in age at first birth in the mother's birthplace is associated with 0.37 years increase in age at first birth among second generations. The results show that there are cultural factors associated with nonmarital fertility and age at the first birth that can be transmitted from one generation to the next.

Keywords Culture · Immigration · Nonmarital fertility · Family economics · Age at first birth

JEL Classification J12 · J15 · D10 · D91

Introduction

Immigrants and their descendants constitute 25% of the US population. This number is equivalent to roughly the whole population of Germany, the world's second country with the highest share of immigrants (Trevelyan et al. 2016). Moreover, the number of resident permits authorized exhibits an increasing trend, with an average annual growth rate of 1.29% for the last two decades (1996–2017) (Security 2018). Likewise, the immigration visas issued grew by 1.4% annually during the same period (Report 2018). The ever-increasing supply of immigrants has triggered social concerns that are also mirrored in recent political debates. Immigration causes concerns to the host country's society in various aspects, including concerns about the school environment and students' outcomes, labor market and native job losses, health care industry and health outcomes, and familial outcomes such as fertility (Angrist and Lang 2004; Bronchetti 2014; Carrasquillo et al. 2000; Cascio and Lewis 2012; Edo 2019; Fernández 2010; Fletcher et al. 2021; McMillan 2019; Murray and Skull 2005; Scheve and Slaughter 2001). Therefore, from a policymaker's perspective, it is crucial to understand the determinants of immigrants' outcomes and factors that facilitate their acculturation and integration into the new environment.

It is widely documented that individuals' outcomes contain cultural elements and that some parts of cultural

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characteristics are inherited through intergenerational transmission mechanisms (Black et al. 2005; Tomes 1981). A strand of literature exploits immigration to explore these cultural factors and intergenerational links (Bogan and Darity 2008; Bozzano 2017; Marcén et al. 2018; Neuman 2018). This literature documents the presence of culture in a wide range of outcomes, including fertility, living arrangement, female education, entrepreneurship, health, corruption, social judgment, and political empowerment (Blau et al. 2013; Bogan and Darity 2008; Bozzano 2017; Neuman 2018; Salari and Noghanibehambari 2021). Relevant to the current study, a few studies also explore the role of culture in explaining the disparities in age at motherhood and nonmarital fertility (Högnäs and Carlson 2012; Kim 2014a).

Nonmarital fertility and age at first birth vary substantially across countries. These outcomes are influenced by various elements, including economic systems, economic conditions, law changes, welfare codes, unemployment insurance benefits, tax policies (e.g., in favor of fertility), family policies, as well as cultural elements. For instance, economic expansion and better labor market opportunities for females in privileged rich countries changed the distribution of roles within traditional families. In addition, government welfare reforms and child support in many countries have provided better health care, nutrition, and other resources for childbearing and childrearing. These changes contributed to the observed increases in nonmarital fertility and peoples' views toward nuclear families. Similarly, changes in educational policies (e.g., promoting high school graduation and college attendance) could also influence female education and keep them away from the marriage market and maternity ward. These institutional confounders make it difficult to isolate the role of culture from other economic and policy-driven factors. This is the primary empirical problem in studies that explore the parent–child intergenerational links in these outcomes and claim to document the role of culture (Högnäs and Carlson 2012; Kim 2014a; Morosow and Trappe 2018). In the current study, we attempt to solve this problem by exploiting the variations in immigrants' outcomes who come from countries with different levels of non-marital fertility and age at motherhood. The idea behind our method is that all the institutional factors and economic elements are eliminated once we observe individuals in the host country. Cultural factors in individual outcomes are portable elements that can be transported in the process of immigration, while contextual factors are not (Alesina et al. 2013; Giuliano and Nunn 2017). Therefore, exploring the effects of home country characteristics on immigrants' outcomes can reveal cultural aspects in their outcomes. This methodology has been ignored in the literature related to age at motherhood and nonmarital fertility, specifically in the case of the USA.

This paper explores the intergenerational transmission of cultural traits among first and second-generation immigrants using nonmarital fertility and age at motherhood in the home country as the cultural proxy. These outcomes reveal some attitudinal components that cannot be captured by fertility or childbearing alone. For instance, nonmarital fertility could reflect women's insight and opinions toward sex, living arrangement, contraception, and pregnancy (Shattuck 2019). Likewise, the age at first birth reflects the views and attitudes towards pregnancy and contraceptive behavior. It is also correlated with how liberal the society allows for free marriage decision-making and partner-choosing (Hong 2006). Therefore, these proxies pick on some aspects of culture that are not reflected in other widely studied outcomes, such as fertility (Alesina et al. 2013; Alesina and Giuliano 2011; Fernández and Fogli 2006; Marcén et al. 2018; Noghanibehambari et al. 2020; Salari 2018, 2020).

We show that average levels of the home country's characteristics have strong and significant explanatory power for second generations' outcomes. The results are quite robust in different robustness checks. We argue that these results point to the evidence of cultural determinants in outcomes that are inherited by the next generations.

The family structure in the USA is going under ever-increasing structural changes (Lundberg et al. 2016). Directly relevant to every family planning policy, nonmarital fertility and the age of parenthood are among the important features of this inevitable revolution. Therefore, understanding to what degree non-economic factors drive these outcomes could help with family policy designs and evaluations. Furthermore, since we take advantage of immigration to search for the transmission of cultural traits, the results could also be informative for immigration policy evaluations.

The current research makes several contributions to the ongoing literature on immigration and culture. First, to the best of our knowledge, it is the first study that links the immigration literature to the literature on nonmarital fertility and age at motherhood. Second, it extends the studies on nonmarital fertility and age at first birth by providing evidence of cultural factors in these outcomes. Third, the relatively large sample size of our study not only adds power to our statistical tests but also enables us to explore the heterogeneity in the effects across cohorts. This heterogeneity analysis is an innovation as previous studies in this topic have not explored, primarily due to their small sample size.

The rest of the paper is organized as follows. In "A Brief Literature Review," we provide a brief literature review. "Data and Sample Selection Strategy" describes the data. The identification strategy is discussed in "The Empirical Method." In "Results," we go over the results. Finally, we conclude the paper in "Conclusion."

A Brief Literature Review

From a policymaker's perspective, it is important to understand to what degree cultural factors determine individuals' outcomes. In this section, we review the studies that aim at answering this question.

In an early study, Carroll et al. (1994) use the Survey of Family Expenditure and explore how immigrants' savings rates in Canada can be explained by cross-country variation in saving rates of their home country. They fail to find associations that are indistinguishable from zero. Fernandez and Fogli (2009) explore the role of culture in second-generation women's outcomes using the 1970 US census. They find that cross-country differences in female labor force participation and fertility can explain a discernible portion of second generations' labor force participation and fertility behavior. Fernandez (2007) shows that home country characteristics can explain the working hours of second-generation women in the USA.

In addition, the cultural elements can also be observed in non-economic outcomes. For instance, Marcén and Morales (2019) show that the living arrangement among couples contains cultural components that can be transmitted from generation to generation. They find that the variations in the behavior of young-arrival immigrants in their living arrangements with their partner (as a married or unmarried couple) can be explained by differences in the share of individuals living together in their home country. This association is also observed for other household arrangements, including living with an adult child, grandparents, and same-gender couples. Using teenage fertility as a proxy for culture and applying a similar epidemiological approach, Bellido et al. (2016) show that the rate of teenage fertility in ancestral countries is a strong predictor of teenage pregnancy among women in the USA. Furtado et al. (2013) explore the cultural determinants of divorce rates among immigrants in the USA. They find that the home country divorce rate, as a proxy for cultural traits in divorce, is strongly correlated with the divorce rates of immigrants. They also find that stronger impacts from the home country to the source country are observed for divorce decisions of females rather than males. Giuliano (2007) explores whether culture can explain the differences in the living arrangements observed between northern and southern European countries. She argues that the sexual revolution of the 1970s affected northern countries while south European countries still had closer child-parent ties. This cultural shock is observed among the second-generation immigrants in the USA, where they face the same benefits, welfare programs, and virtually similar economic conditions. The southern-origin individuals were still more likely to live with their parents than northern-origin individuals. The decision on the living arrangement can also extend to the elderly living arrangements. Gentili et al. (2017) show that older people in Switzerland who are originated from Latin culture enter nursing homes in worse health conditions compared to their German-originated counterparts. Therefore, the cultural traits have the potential to impact the Long-Term Care (LTC) market.

Culture also influences political opinion. Luttmer and Singhal (2011) show that immigrants' preferences for redistribution are correlated with the average preference of their home country. Descendants of high-preference countries are more likely to vote for a pro-redistribution party. Marcén and Morales (2020) explore the effect of culture on homeownership decisions. They find that immigrants from home countries with a higher proportion of homeowners are more likely to become a homeowner in the source country.

Similar studies also investigate the influence of culture on other economic and non-economic outcomes, including gender roles in the labor market (Neuman 2018), smoking behavior (Reiss et al. 2014), entrepreneurship (Bogan and Darity 2008), social judgment (Salmon and Serra 2017), intra-household decision-making (Oreffice 2014), political empowerment (Bozzano 2017), test scores and cognitive scores (Cobb-Clark and Moschion 2017; Cornwell et al. 2013; Fryer and Levitt 2010), gender gap (Cobb-Clark and Moschion 2017; Goldin 2014; Goldin et al. 2006; Hanushek et al. 2015), language capital (Casey and Dustmann 2008), and education and labor market outcomes (Blau et al. 2013). The current study implements the same approach while introducing two novel proxies for the culture: age of parenthood and nonmarital fertility as the two critical aspects of parental behavior. We review the literature related to these outcomes separately in the following subsections.

Age at First Birth

Age at first birth has gone through fundamental changes over the past decades in the USA. The mean age of motherhood increased from a national average of 22.7 in 1980 to 26.8 in 2017 (National Center for Health Statistics 2020). Except during the great recession, in which it remained stagnant, the age at first birth experienced a constant increase in all years and among mothers of different ethnicity and races. Understanding the consequences and drivers of these changes has important policy implications. For instance, it is important for family planning policies to quantify the reliance of age at motherhood on economic (versus non-economic) incentives.

To this end, a strand of literature examines the economic consequences of delayed motherhood. For instance, Bailey (2006) uses the introduction of birth control pills in 1960 to assess the causal impact of the timing of first birth on female labor force participation. She finds that legal access to the

contraceptive pill before age 21 decreases the likelihood of first birth before age 22, increases labor force participation, and raises the number of annual hours worked. Other papers find similar negative effects of early motherhood on economic outcomes. Using an IV based on in vitro fertilization, Lundborg et al. (2017) show that fertility has a negative and long-lasting effect on female earnings. In addition, the decision to have a child for the first time is associated with negative effects on mothers' labor market outcomes.

At the same time, delayed motherhood raises women's earnings by 9% per year of delay, increases wages by 3%, and work hours by 6% (Miller 2011). Therefore, the literature suggests that a woman's decision of first birth is influenced by her concern toward education, employment, and earnings.

On the other hand, some studies explore the roots and determinants of age at first birth (Barber 2001; Kim 2014b; Morosow and Trappe 2018; Steenhof and Liefbroer 2008). Relevant to the current study, one important driver behind the age of motherhood is the cultural norms. A small strand of literature explores the cultural roots of age at first birth that transmits from parents to children as a family trait. In an early attempt, Manlove (1997) uses longitudinal data of different British cohorts and shows that early motherhood is reproduced across generations even after controlling for family characteristics, home-environment covariates at age 16, age at menarche, and school performance. Steenhof and Liefbroer (2008) reexamine this topic for birth cohorts born between 1935 and 1984 in the Netherlands and find a strong intergenerational correlation between age at parenthood within families. Furthermore, they show that the observed intergenerational links increase in size for successive cohorts.

Using the German Family Panel dataset, Morosow and Trappe (2018) document evidence of intergenerational transmission of young childbearing from mothers to daughters in East Germany and West Germany. This intergenerational link is significant and valid even after controlling for socioeconomic and sociability indicators. Kim (2014b) reveals the same results in the USA. Using two waves of the National Longitudinal Survey of Youth for two cohorts born in the 1950s and 1980s (NLSY79 and NLSY97, respectively), he first shows that age at first birth transmits intergenerationally from parents to their child. Additional analyses suggest that the intergenerational link has been intensifying over time. The younger cohorts are more bound to their parents' respective traits.

While teenage fertility is generally linked to adverse later-life outcomes, delayed motherhood is associated with improved outcomes, specifically in the labor market. However, delayed motherhood could lead to adverse maternal and infant health if motherhood's age exceeds a certain threshold. The medical literature suggests that *Advanced Maternal Age* (ages 40–45) and *Very Advanced Maternal Age* (ages 45 +) are associated with risks of fetal death, adverse birth outcomes, and maternal mortality (Arya et al. 2018; Ben-David et al. 2016; Carolan and Frankowska 2011; Jacobsson et al. 2004; Liou et al. 2010). However, These negative outcomes start at a point above which only a few observations occur in our samples. For instance, in our final sample, only about 2% of mothers have their first birth between the ages of 40 and 44, and roughly 0.4% of them have their first pregnancy at ages above 45.

Nonmarital Birth Giving

Nonmarital fertility has increased dramatically during the past decades. Roughly 39.8% of US births in 2017 were out-of-wedlock (Martin et al. 2018).[1] The rate was 33.2% in 2000 and 18.4% in 1980 (Martin et al. 2002). Childbearing and childrearing in one-parent and multiple-partner families have changed shape from an anomaly into a new social norm in American families (Lundberg and Pollak 2007). An examination of the causes and consequences of nonmarital fertility and new forms of family structure is necessary not only for family-related policy designs but also to understand the dynamics of the next generation's labor outcomes.[2]

Economic factors play a role in nonmarital fertility. For instance, Adverse macroeconomic conditions lead to lower nonmarital fertility rates (Schneider 2017). Other studies suggest a strong tie between economic and cultural factors that drive nonmarital fertility. For example, in a recent work, Kearney and Wilson (2018) investigate whether the recent decline in male earnings in the USA affected the increasing rates of nonmarital fertility. They exploit the fracking boom in the early 2000s and increased unconventional oil and gas production as a plausibly exogenous shock to income. A reduced form county-level analysis shows that while the relative income increase in counties that experienced unconventional oil extraction boom did not lead to an increase in marriage rates, it did increase both marital and nonmarital fertility. The results are compared to the Appalachian coal boom during the 1970s and 1980s, during which a similar exogenous shock to income had caused an increase in marriage rates and had reduced nonmarital fertility. They conclude that there are cultural and social factors associated with nonmarital fertility.

Other studies find that the cultural elements can be transmitted from parents to children in an intergenerational

[1] Nonmarital fertility differs substantially by race and ethnicity. In 2017, nonmarital fertility among whites, Hispanics, and blacks was 28.4, 52.1, and 69.4%, respectively (National Center for Health Statistics 2020).

[2] For a review, refer to Kearney and Levine (2017).

transmission process. As an example, Högnäs and Carlson (2012) use data from the National Survey of Family Growth and find that children of parents who have given birth while unmarried are more likely to have a nonmarital birth. The effects become smaller but still statistically significant after controlling for socioeconomic background, gender, and ethnicity.

In the USA, nonmarital fertility occurs primarily among the disadvantaged population, women with low education, in areas with high levels of inequality, and among minorities (Schneider and Hastings 2015; South and Crowder 2010; Upchurch et al. 2002; Wildsmith and Raley 2006; L. L. Wu 2008). Nonmarital fertility also reveals some unbalance between women's and men's values in the marriage market and points to men's declining marriage market value (Autor et al. 2019; Kearney and Wilson 2018; South and Lloyd 1992). Moreover, it is correlated with higher teenage fertility, higher incidences of high school dropout, and also adverse childhood conditions (Hao and Cherlin 2004; Williams and Finch 2019). Since nonmarital fertility in the USA reflects adverse life conditions, it is necessary to better understand its determinants, and specifically, whether or not there are cultural components associated with it. One should note that these studies focus on the intergenerational link between parents to children. Our study differs from this literature by applying an epidemiological approach among immigrants and following the connection between the home country and immigrants' behavior. We show the intergenerational links that occur from parents to children as well as from neighbors and communities to second generations. Therefore, this study provides a broader intergenerational link than the one used in the literature.

Data and Sample Selection Strategy

This study uses various sources of data. This section reviews the data sources and sample exclusion criteria.

The main data source is the Current Population Survey (CPS) from January 1994 (the first date that CPS asks for individuals' place of birth and parental place of birth) until September 2020, extracted from Flood et al. (2020). Second generations are US-born individuals whose fathers or mothers are born in foreign countries, excluding US territories. All individuals not categorized as second-generation immigrants are excluded. Since the main focus of cultural transmission in nonmarital fertility and motherhood age is women, we restrict the sample to females.

As an alternative dataset, we use decennial Censuses for the years 1970–2000 pooled with the annual American Community Survey between 2001 and 2019 extracted from Ruggles et al. (2020). Census-ACS pooled dataset does not ask a respondent's mother or father's country of birth, but it asks about the region of ancestry. We use this information to infer the country of ancestry. In so doing, we map the location of ancestral origin with country borders. We eliminate those ancestries that refer to regions in more than one country and keep the ones for which a specific country can be identified.[3] Since this information does not recognize the second generation from third and higher generations, we refer to this group (US-born individuals with a foreign ancestral country) second-and-higher generation group. Therefore, in the same manner, we restrict the Census-ACS sample to women of second-and-higher generations.

Both CPS and Census-ACS datasets do not provide information about mothers' marital status at the time of birth nor the age at first birth. However, there are sufficient relevant variables in these datasets by which we can infer these outcomes. In so doing, we construct two proxies based on household information, current marital status, and the mother's current age. For the analysis of nonmarital fertility, we restrict the sample to mothers who have at least one child and those whose youngest child is at most two. The current marital status of these mothers could be used as a proxy for their marital status at the time of birth. For the intergenerational link of age at motherhood, we use the age of the oldest child present in the household and the current age of the mother to estimate the probable age of the mother at first birth. To avoid including mothers whose firstborn child has been old enough to leave the household, mothers above 40 years old are eliminated from both samples.

Average home country characteristics are extracted from two external data sources. Median age at first birth is withdrawn from Factbook (2015). Fernández and Fogli (2006) note that cultural traits persist with strong momentum across generations in one country. They use the average fertility rates in the home country in 1990 and show that these cross-country differences can explain second-generation immigrants' fertility rates in the US in 1970. On the same presumption, we use average home country age at first birth during the 2000s as a proxy for home country characteristics for earlier years, regardless of which cohort they belong. The data for motherhood age analysis covers 86 countries. This median age at first birth is 23.8 years, with a standard deviation of 3.58 (see Appendix Table 13).

Nonmarital fertility rates are extracted from OECD (2017). We use average rates of births to mothers whose marital status at the time of birth was unmarried, in the year 1990, as the proxy for home country nonmarital birth rates. This dataset covers 34 countries. The mean rate of nonmarital fertility is 23.26%, with a standard deviation of 14.87%.

[3] In Appendix A, we show that the results are quite robust and similar to the main findings when we relax this assumption.

Table 1 Summary Statistics

	Mean	SD
Census-ACS sample		
Age at first birth in ancestral country	27.38	3.087
Nonmarital birth rate in ancestral country	0.24	0.12
Age at first birth	26.411	5.858
Nonmarital birth	0.12	0.325
Age	39.853	9.634
Race white	0.86	0.347
Race black	0.013	0.115
Observations	7,636,110	
Current population survey sample		
Age at first birth in mother birthplace	23.036	3.035
Age at first birth in father birthplace	22.939	2.951
Nonmarital birth father birthplace	0.304	0.117
Nonmarital birth mother birthplace	0.305	0.118
Age at first birth	26.133	6.276
Nonmarital birth	0.148	0.355
Age	40.458	10.492
Race white	0.705	0.456
Race black	0.064	0.245
Observations	272,159	

The CPS data covers the years 1994–2020. The Census covers the decennial years 1970–2000. The ACS covers the years 2001–2020

The home country datasets are then merged with CPS and Census-ACS datasets. All unmerged observations are omitted. The final CPS sample contains 272,159 s-generation women. The final Census-ACS sample consists of 7,636,110 s-and-higher generation women.

Summary statistics of individual characteristics in both samples are reported in Table 1. In the CPS sample, the average age at motherhood is 26 years. In addition, roughly 15% of women are unmarried at the time of birth.

The left panel of Fig. 1 illustrates the unconditional correlation between second-generation immigrants' age at first birth and their mothers' home country average values in the CPS sample. Unconditionally and illustratively, the median age at first birth in the home country can explain 54% of variations among the second generations. The right panel of Fig. 1 depicts the same qualitative patterns for nonmarital fertility observed in the Census-ACS sample. The correlation between women's nonmarital fertility among second-and-higher generations with nonmarital behaviors in their country of birth is roughly 43%.

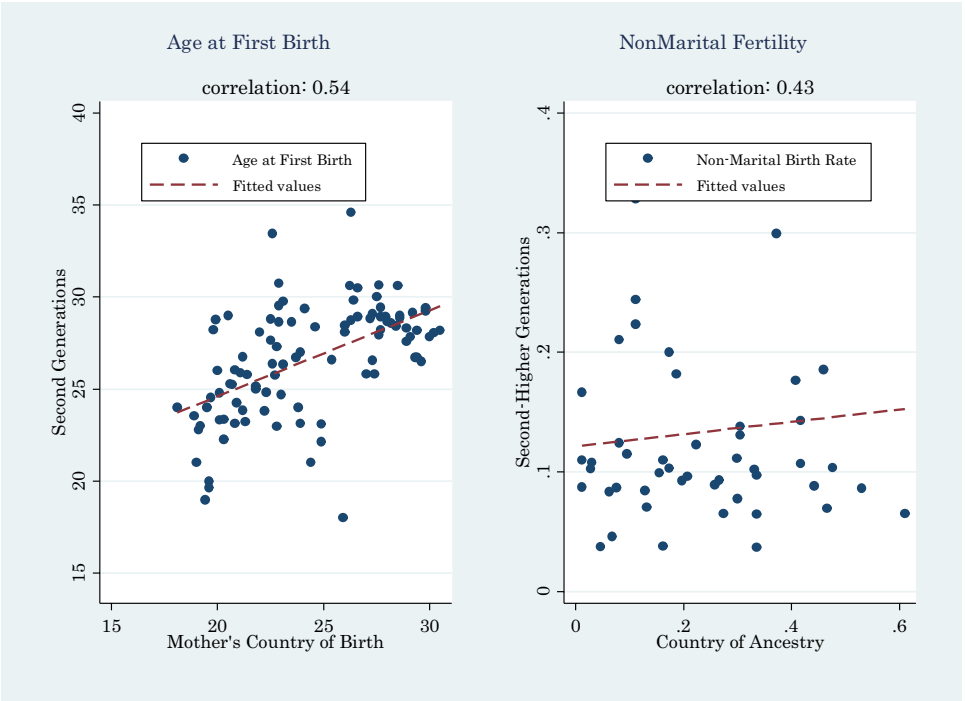

Fig. 1 Unconditional correlations of age at first birth and nonmarital fertility between immigrants and their home country

The Empirical Method

To capture the intergenerational transmission of culture, we run different specifications of the following regression:

$$y_{isct} = \beta_0 + \beta_1 X_c + \beta_2 R_{isct} + \beta_3 Z_{ct} + \xi_{st}\epsilon_{isct} \quad (1)$$

where y is the outcome (age at first birth and nonmarital fertility) of woman i observed in year (survey date) t in state of residence s from home country c. The terms home

Table 2 Intergenerational transmission of age at first birth using current population survey data (1994–2020)

	Second generations, MBPL			Second generations, FBPL		
	(1)	(2)	(3)	(4)	(5)	(6)
Age at first birth in						
Mother's country of birth	0.4905***	0.29806***	0.3723***			
	(0.08312)	(0.03731)	(0.04842)			
Father's country of birth				0.50106***	0.29723***	0.37907***
				(0.0868)	(0.03825)	(0.0453)
Observations	249,541	249,541	241,441	247,252	247,252	239,567
State-year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Individual controls	No	Yes	Yes	No	Yes	Yes
Family and home country controls	No	No	Yes	No	No	Yes

Standard errors, clustered at the home country level, are in parentheses. Individual controls include a quadratic function in age and dummies for race. Home country controls include average GDP growth and population growth over the years 1970–2010, Gini index, Human Development index, and share of major religions in the country. *** $p<0.01$, ** $p<0.05$, * $p<0.1$

country, country of origin, homeland, or country of ancestry are interchangeably used throughout the paper and refer to parents' country of birth for second generations (mother's birthplace (MBPL) or father's birthplace (FBPL)) and ancestral country for second-and-higher generations. Average outcomes in the country of ancestry are included in the vector X. Therefore, the parameter β_1 is our coefficient of interest that determines the association between source country characteristics and immigrants' outcomes.

In R, we include individual covariates, including a quadratic function of age and dummies for race. A series of home country controls are included in Z. These controls include average GDP growth and population growth over the years 1970–2010, Gini index, Human Development index (HDI), and share of major religions.[4] The parameter ξ represents a set of state-by-year fixed effects to control for all contemporaneous differences across states that vary by time and may influence immigrants' outcomes. Finally, ϵ is a disturbance term. We cluster standard errors at the country of origin level.

Results

Age at First Birth

The main results of age at motherhood using the CPS sample are reported in Table 2. The results are separated by mother and father's country of birth in the two panels. We start by reporting a parsimonious model that only includes fixed effects and adds individual and home country covariates across consecutive columns. A one-year increase in age at motherhood in mother and father country of origin leads to a 0.37 and 0.38 years increase in age at first birth among second generations, respectively. These numbers imply a 1.4% change from the mean of the outcome among second generations.

The results of the Census-ACS sample are reported in Table 3. Column 3 shows the full specification model. The marginal effects are somewhat smaller than estimates of mother and father's birthplace among second generations in the CPS sample. For example, a one-year increase in age at first birth is associated with 0.25 years increase in age at first birth among second-and-higher-generation immigrants, equivalent to about a 0.9% rise from the mean. However, note that all estimates are significant at the 1% level.

Table 3 Intergenerational transmission of age at first birth using Census-ACS data (1970–2019)

	Second-and-higher generations		
	(1)	(2)	(3)
Age at first birth in			
Country of ancestry	0.32793***	0.22018***	0.24827***
	(0.06311)	(0.04296)	(0.05058)
Observations	7,635,519	7,635,519	7,538,656
State-year fixed effects	Yes	Yes	Yes
Individual controls	No	Yes	Yes
Family and home country controls	No	No	Yes

Standard errors, clustered at the home country level, are in parentheses. Individual controls include a quadratic function in age and dummies for race. Home country controls include average GDP growth and population growth over the years 1970–2010, Gini index, Human Development index, and share of major religions in the country. *** $p<0.01$, ** $p<0.05$, * $p<0.1$

[4] A list of home-country characteristics is provided in Appendix C.

Table 4 Intergenerational transmission of nonmarital fertility using current population survey data (1994–2020)

	Second generations, MBPL			Second generations, FBPL		
	(1)	(2)	(3)	(4)	(5)	(6)
Average nonmarital fertility in						
Mother's country of birth	0.32636***	0.16932***	0.08674**			
	(0.04762)	(0.03134)	(0.03776)			
Father's country of birth				0.36693***	0.18574***	0.07605*
				(0.0499)	(0.03455)	(0.03808)
Observations	47,405	47,405	46,475	47,082	47,082	46,243
State-year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Individual controls	No	Yes	Yes	No	Yes	Yes
Family and home country controls	No	No	Yes	No	No	Yes

Standard errors, clustered at the home country level, are in parentheses. Individual controls include a quadratic function in age and dummies for race. Home country controls include average GDP growth and population growth over the years 1970–2010, Gini index, Human Development index, and share of major religions in the country. *** $p<0.01$, ** $p<0.05$, * $p<0.1$

Overall, the results are in line with previous literature and confirm that there are cultural components associated with age at first birth. However, since this limited literature applies different identification strategies, it is difficult to compare the results. For example, Kim (2014a) shows that each additional year increase in mothers' age at first birth reduces the odds of transition into parenthood by 5.5% for their daughters.

Nonmarital Birth Giving

The regression results for nonmarital fertility using the CPS sample are reported in Table 4. Similar to Table 3, we add more control variables for each consecutive column. For example, column 1 of the left panel shows the estimated coefficient when we apply full fixed effects without demographic controls. The results suggest that both paternal and maternal source countries have explanatory power for their nonmarital fertility behaviors. As shown in the full specifications of columns 3 and 6 (Table 4), a one-percentage-point increase in the nonmarital birth rate in mother and father country of birth is associated with an 8.6 and 7.6 basis-point higher probability of nonmarital fertility among second generations, respectively. These associations are equivalent to a 57 and 52% rise from the mean. All coefficients are significant at conventional levels. In comparison with the literature on intergenerational transmission of fertility, these marginal effects are larger as a relative rise from the mean. For example, Fernandez and Fogli (2009) find that an increase of one unit in the fertility rate of the home country is associated with a 0.22 unit rise in the number of children, an increase of about 7.5% from the mean. However, the results are in line with the narrow literature on cultural factors of nonmarital fertility. For example, Högnäs and Carlson (2012) find that parents' nonmarital birth raises the odds of their children having a nonmarital birth by about 16%.

Table 5 illustrates the results using the Census-ACS sample. The effects for second-and-higher generations are much lower than the estimated effects for second generations in the CPS sample (Table 4). As shown in the full specification in column 3, a one-percentage-point rise in the nonmarital fertility rate in the ancestral country leads to a 5.4 basis-point increase in the likelihood of nonmarital birth among second-and-higher generation immigrants, an increase of about 45% from the mean. All the coefficients of interest are significant at the conventional levels.

Table 5 Intergenerational transmission of nonmarital fertility using Census-ACS data (1970–2019)

	Second-and-higher generations		
	(1)	(2)	(3)
Average nonmarital fertility in			
Country of ancestry	0.16165*	0.08266**	0.05439***
	(0.08315)	(0.03978)	(0.01369)
Observations	1,035,975	1,035,975	1,027,064
State-year fixed effects	Yes	Yes	Yes
Individual controls	No	Yes	Yes
Family and home country controls	No	No	Yes

Standard errors, clustered at the home country level, are in parentheses. Individual controls include a quadratic function in age and dummies for race. Home country controls include average GDP growth and population growth over the years 1970–2010, Gini index, Human Development index, and share of major religions in the country. *** $p<0.01$, ** $p<0.05$, * $p<0.1$

Table 6 Effects on fertility and family size using CPS data

	Outcomes			
	Number of children		Family size	
	(1)	(2)	(3)	(4)
Average age at first birth in mother's birthplace	−0.03718***		−0.03449**	
	(0.01288)		(0.01465)	
Average nonmarital fertility in mother's birthplace		0.1157		0.06153
		(0.19465)		(0.20803)
Observations	241,441	134,824	241,441	134,824
State-year fixed effects	Yes	Yes	Yes	Yes
Individual controls	Yes	Yes	Yes	Yes
Family and home country controls	Yes	Yes	Yes	Yes

Standard errors, clustered at the home country level, are in parentheses. Individual controls include a quadratic function in age and dummies for race. Home country controls include average GDP growth and population growth over the years 1970–2010, Gini index, Human Development index, and share of major religions in the country. *** $p<0.01$, ** $p<0.05$, * $p<0.1$

Table 7 Effects on fertility and family size using Census-ACS data

	Outcomes			
	Number of children		Family size	
	(1)	(2)	(3)	(4)
Average age at first birth in country of ancestry	−0.03941***		−0.03526***	
	(0.01085)		(0.01177)	
Average nonmarital fertility in country of ancestry		0.3307*		0.24831
		(0.18751)		(0.18163)
Observations	7,538,656	6,781,658	7,538,656	6,781,658
State-year fixed effects	Yes	Yes	Yes	Yes
Individual controls	Yes	Yes	Yes	Yes
Family and home country controls	Yes	Yes	Yes	Yes

Standard errors, clustered at the home country level, are in parentheses. Individual controls include a quadratic function in age and dummies for race. Home country controls include average GDP growth and population growth over the years 1970–2010, Gini index, Human Development index, and share of major religions in the country. *** $p<0.01$, ** $p<0.05$, * $p<0.1$

Effects on Fertility and Family Size

The decision for the age of marriage and motherhood is partly determined by the desired and planned fertility (Johow and Voland 2012; Nasrullah et al. 2014). Moreover, studies suggest that there are potential correlations between nonmarital birth-giving and total fertility (Rindfuss et al. 2003; Wu 2008). We add to this literature by evaluating the intergenerational transmissions for fertility and family structure. We use the same methodological approach as in Eq. 1 and replace the outcome with the total number of children and family size. The results of the CPS sample are reported in Table 6. The results suggest a strong and negative correlation between age at first birth with both outcomes. An increase of one-year age at first birth is correlated with a 0.03 unit rise in family size. However, the effects of nonmarital fertility are insignificant.

We report the results of the Census-ACS sample in Table 7. We observe quite similar patterns. The correlations with nonmarital fertility in the home country are barely significant. The marginal effects on fertility, although statistically significant, are quite small in magnitude. Therefore, we are not concerned that the observed associations in "Age at First Birth" and "Nonmarital Birth Giving" are primarily driven by decisions towards fertility and family structure.

As discussed above, the decision of second-generation women to delay their fertility or to have a child outside of marriage could be driven by their desired family size and future fertility. However, such decisions could also contain cultural elements that can be transmitted from the home country to second-generation immigrants through the intergenerational transmission process. For instance, if descendent of countries that historically prefer larger family sizes also prefer larger families and for this reason they decide to

have children earlier in life, then the estimated results only point to the cultural factors related to fertility rather than age at first birth. Similarly, if second-generation women of countries with low fertility rates prefer outside-marriage fertility as they do not plan for further children, again our results only estimate fertility effects. To address this concern, we include the average ancestral country fertility rate as a control variable and re-estimate our results. We report this set of findings in Appendix B. As one can observe from comparing the estimated coefficients of Appendix Tables 9, 10, 11, and 12 with those of Table 2 through Table 5 (in their respective order), the coefficients are quite comparable with the main results, and both economically and statistically significant. For instance, a one-percentage-point rise in nonmarital fertility in the mother's home country is correlated with an 8.1 basis-point rise in nonmarital fertility of second generations once we include fertility rate, similar to an 8.7 basis-point increase without the inclusion of home country fertility rate.

A Discussion of the Results

The results so far pointed to cultural transmission in our outcomes of interest. However, the current research (as well as the large body of research on intergenerational transmission of culture among immigrants) has some drawbacks, which we discuss below.

First, many factors contain cultural elements that can be transmitted through an intergenerational process from the home country to the first and second generations. These factors could also be correlated with age at first birth and nonmarital fertility. The examples include opinions regarding female education, entrepreneurship, employment, gender opinions, etc. Therefore, our estimations do not point to a causal effect and reveal only the correlational links.

Another source of endogeneity is non-cultural portable elements like religion. Second and even third-and-higher generations can follow the same path as their ancestral country not because of visiting or having a connection with their home country but because their religion stipulates those traits. For example, suppose one religion emphasizes women's childbearing and encourages them to give birth earlier in life. In that case, second generations who follow this religion might give birth earlier in life not because of having a connection with their home country but because they are adherents of this faith. Controlling for the share of religious people in the home country (as we do in our regressions) only partly solves this issue.

Third, immigrants who choose to migrate could vary from those who do not migrate in their education, income, social class, and opinions regarding pregnancy, contraceptive behavior, age of motherhood, and nonmarital fertility. These self-selections could attenuate the choice of average home country characteristics as a proxy for culture (Chiquiar and Hanson 2005).

Fourth, temporary and permanent out-migration is a potential source of bias in immigration papers that primarily rely on repeated cross-sectional data. Dustmann and Görlach (2015) document that out-migration is a prevalent phenomenon, and more importantly, it is selective based on individuals' income and education. The influential work of Lubotsky (2007) examines how this out-migration, transient immigrants, and their selectiveness could estimate faster growth in the assimilation process of immigrants' earnings when using cross-sectional data compared to longitudinal data. Relevant to the current study, which uses a series of repeated cross-sections, if these characteristics could affect nonmarital fertility and age at motherhood, then the estimated results report biased effects.

Fifth, the studies that explore the intergenerational transmission of cultural traits and immigrants' integration usually focus on the second (and higher) generation assuming that these generations are isolated from the home country. Therefore, the transmission of cultural habits occurs only through their families, relatives, neighbors, or communities in the host country. However, second generations, multiracial, and mixed-origin individuals are not necessarily completely disengaged from their ancestral homelands. There could be physical connections (e.g., visits, calls) or mental connections (mails from relatives, reading books, parents telling stories, etc.) that connect them to their country of origin. A strand of literature in economics and sociology documents a variety of *acculturation strategies* among second-and-higher generations (Berry and Sabatier 2010; Kunst and Sam 2014; Nekby and Rödin 2010).

Conclusion

Using two samples based on CPS data files (1994–2020) and the pooled Census (1970–2000) and ACS (2001–2019) data, this paper provides evidence of the intergenerational link between home country culture and immigrants' behavior. The culture is proxied by nonmarital fertility and age at motherhood. The estimated results show evidence of a statistical association between home country characteristics and second-(and-higher)-generation immigrants' observed behavior in both nonmarital fertility and age at first birth. Conditional on individual covariates, home country controls, and state-by-year fixed effects, average rates of nonmarital fertility and the median age at first birth have significant explanatory power for the respective outcomes of immigrants.

Among second generations, a one-standard-deviation change in age at motherhood in the mother's country of birth is associated with a 1.1 years increase in the second

Table 8 Intergenerational transmission of age at first birth and nonmarital fertility using Census-ACS Data (1970–2019) for all ancestries

	Age at first birth	Nonmarital fertility
	(5)	(6)
Average age at first birth in country of ancestry	0.265***	
	(0.069)	
Average nonmarital fertility in country of ancestry		0.064***
		(0.006)
	10,942,422	7,683,800
State-year fixed effects	Yes	Yes
Individual controls	Yes	Yes
Family and home country controls	No	Yes

Standard errors, clustered at the home country level, are in parentheses. Individual controls include a quadratic function in age and dummies for gender and race. Home country controls include average GDP growth and population growth over the years 1970–2010, GDP per capita, Gini index, Human Development index, and share of major religions in the country. *** $p<0.01$, ** $p<0.05$, * $p<0.1$

Table 9 Intergenerational transmission of age at first birth using current population survey data (1994–2020) controlling for home country fertility rates

	Second generations, MBPL			Second generations, FBPL		
	(1)	(2)	(3)	(4)	(5)	(6)
Age at first birth in						
Mother's country of birth	0.41255***	0.2269***	0.29788***			
	(0.06593)	(0.02679)	(0.03464)			
Father's country of birth				0.4206***	0.22739***	0.30577***
				(0.06874)	(0.02762)	(0.03188)
Observations	249,541	249,541	241,441	247,252	247,252	239,567
State-year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Individual controls	No	Yes	Yes	No	Yes	Yes
Family and home country controls	No	No	Yes	No	No	Yes

Standard errors, clustered at the home country level, are in parentheses. Individual controls include a quadratic function in age and dummies for race. Home country controls include average GDP growth and population growth over the years 1970–2010, Gini index, Human Development index, and share of major religions in the country. *** $p<0.01$, ** $p<0.05$, * $p<0.1$

generations' age at motherhood. We observe a similar pattern when looking at the intergenerational links in nonmarital fertility. A one-percentage-point increase in nonmarital fertility across home countries is associated with a 5.4 basis-point rise in the likelihood of nonmarital fertility among second-and-higher generations, respectively.

We argue that culture is a portable element and has strong momentum. We can isolate the role of culture from other institutional and contextual factors by comparing the outcomes of immigrants in the host country, where they are exposed to virtually similar institutional influencers. Therefore, the variation in their outcomes reflects cultural elements that were transported from their home country. We document the association between immigrants' behavior and their home country characteristics and interpret these findings as cultural elements. These results imply that there are some cultural components in women's decisions for nonmarital fertility and age at first birth, which can be transmitted from one generation to the next.

Appendix 1

In the main results, we exclude observations in the Census-ACS sample that their ancestry refers to more than one country. In this appendix, we relax this restriction. We use the average value of ancestral counties in nonmarital fertility and age at first birth and include them for multiple-ancestral individuals. The results are reported in Appendix Table 8. The marginal effects are quite similar to those reported in the main results.

Table 10 Intergenerational transmission of age at first birth using Census-ACS data (1970–2019) controlling for home country fertility rates

	Second-and-higher generations		
	(1)	(2)	(3)
Age at first birth in			
Country of ancestry	0.2533***	0.1526***	0.18248***
	(0.04831)	(0.0259)	(0.03836)
Observations	7,635,519	7,635,519	7,538,656
State-year fixed effects	Yes	Yes	Yes
Individual controls	No	Yes	Yes
Family and home country controls	No	No	Yes

Standard errors, clustered at the home country level, are in parentheses. Individual controls include a quadratic function in age and dummies for race. Home country controls include average GDP growth and population growth over the years 1970–2010, Gini index, Human Development index, and share of major religions in the country. *** $p<0.01$, ** $p<0.05$, * $p<0.1$

the coefficients drop slightly but remain statistically and economically significant.

Appendix 3

The following table reports the country-level characteristics of home countries used in the paper.

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Data Availability The datasets used and/or analyzed during the current study are available from the corresponding author.

Declarations

Table 11 Intergenerational transmission of nonmarital fertility using current population survey data (1994–2020) controlling for home country fertility rates

	Second generations, MBPL			Second generations, FBPL		
	(1)	(2)	(3)	(4)	(5)	(6)
Average nonmarital fertility in						
Mother's country of birth	0.42249***	0.20788***	0.08101**			
	(0.05692)	(0.03999)	(0.03847)			
Father's country of birth				0.38208***	0.1915***	0.08987**
				(0.05443)	(0.03611)	(0.03818)
Observations	47,082	47,082	46,243	47,405	47,405	46,475
State-year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Individual controls	No	Yes	Yes	No	Yes	Yes
Family and home country controls	No	No	Yes	No	No	Yes

Standard errors, clustered at the home country level, are in parentheses. Individual controls include a quadratic function in age and dummies for race. Home country controls include average GDP growth and population growth over the years 1970–2010, Gini index, Human Development index, and share of major religions in the country. *** $p<0.01$, ** $p<0.05$, * $p<0.1$

Appendix 2

The decision of women to delay parenthood or having a child out of marriage could be partially explained by their desired family size. This desired fertility and plan for family size could also contain some cultural heritage that can be transmitted from generation to generation. In this appendix, we control for this cultural aspect by adding home country fertility rates into our main regressions. We then replicate the results of Table 2 through Table 6. These replicated results are reported in Appendix Table 9 through Appendix Table 12. Compared to the main results,

Competing Interests Not applicable.

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Table 12 Intergenerational transmission of nonmarital fertility using Census-ACS data (1970–2019) controlling for home country fertility rates

	Second-and-higher generations		
	(1)	(2)	(3)
Average nonmarital fertility in			
Country of ancestry	0.18608*	0.08542**	0.05804***
	(0.09433)	(0.0408)	(0.01451)
Observations	1,035,975	1,035,975	1,027,064
State-year fixed effects	Yes	Yes	Yes
Individual controls	No	Yes	Yes
Family and home country controls	No	No	Yes

Standard errors, clustered at the home country level, are in parentheses. Individual controls include a quadratic function in age and dummies for race. Home country controls include average GDP growth and population growth over the years 1970–2010, Gini index, Human Development index, and share of major religions in the country. *** $p<0.01$, ** $p<0.05$, * $p<0.1$

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Table 13 Home country characteristics

Home country	Age at first birth	Non-marital fertility	Fertility rate	Human development index	Gini coefficient	Population growth	GDP per capita	GDP growth (30-year average)	%Aged 15–64	Dominant religion
Albania	23.90		2.1	0.72	33.00	−1.00	3.91	2.20	68.07	Muslim
Armenia	24.10		1.6	0.70	30.17	−1.90	3.87	0.70	72.40	Orthodox Christian
Australia	30.50	26.56	1.7	0.94	35.20	1.17	47.37	1.90	67.70	Catholic
Austria	28.50	27.40	1.4	0.85	29.10	0.70	49.60	2.20	67.70	Catholic
Azerbaijan	24.40		2	0.71	16.80	1.50	5.32	1.10	70.27	Muslim
Bangladesh	18.10		3.2	0.47	31.00	2.00	0.50	1.80	61.10	Muslim
Belarus	24.90		1.3	0.73	28.80	0.00	6.23	1.17	71.70	Orthodox Christian
Belgium	28.00	17.30	1.7	0.87	33.00	0.30	47.09	2.00	66.07	Catholic
Bolivia	21.20		4	0.64	57.20	2.27	1.72	0.90	60.70	Catholic
Brazil	22.00		2.3	0.70	55.00	1.60	8.21	2.20	67.00	Catholic
Bulgaria	26.20	25.70	1.3	0.74	29.17	−1.10	6.55	3.27	67.90	Orthodox Christian
Cameroon	19.40		5.6	0.46	44.60	2.77	1.23	1.17	56.20	Other
Canada	27.60	30.50	1.5	0.89	32.60	1.10	45.07	1.90	68.50	Catholic
Cape Verde	19.50		3.5	0.53	50.37	2.27	3.19	2.27	61.87	Catholic
Chile	23.70		2	0.78	52.00	1.80	10.08	2.77	68.07	Catholic
China	26.24		1.6	0.66	41.50	1.17	3.27	7.90	73.57	Buddhist
Colombia	21.40		2.6	0.69	58.50	1.90	5.42	2.00	67.20	Catholic
Congo	19.80		4.9	0.24	44.37	3.90	0.18	−3.00	53.00	Catholic
Costa Rica		45.92	1.7	0.73	48.87	2.37	6.56	1.90	69.07	Catholic
Croatia	27.70	7.50	1.4	0.77	29.00	0.70	15.64	2.10	68.07	Catholic
Czech Republic	27.60	15.60	1.1	0.84	25.80	0.00	20.67	0.20	70.20	Other
Denmark	29.10	46.50	1.8	0.87	24.67	0.30	62.12	1.60	65.27	Other Christian
Dominican Republic	20.30		2.8	0.66	48.37	1.90	4.58	3.00	64.00	Catholic
Ecuador	21.80		3.1	0.70	54.37	2.10	4.06	2.20	63.50	Catholic
Egypt	22.90		3.3	0.62	32.10	2.00	1.99	2.50	62.77	Muslim
El Salvador	20.80		3	0.66	46.87	1.37	3.61	1.10	63.00	Catholic
England	30.00	33.50	1.6	0.85	36.00	0.30	43.54	1.90	66.20	Other Christian
Estonia	26.30	44.20	1.4	0.81	36.00	−1.70	17.45	0.70	67.20	Orthodox Christian
Ethiopia	19.60		6.5	0.33	29.80	3.27	0.32	1.30	51.00	Muslim
Finland	27.90	33.10	1.7	0.87	26.87	0.50	51.32	2.20	66.07	Other Christian
France	28.60	41.70	1.9	0.87	32.70	0.40	44.51	1.80	64.70	Catholic
Georgia	23.90		1.6	0.70	40.77	−1.50	2.97	0.30	68.27	Orthodox Christian
Germany	28.90	16.10	1.5	0.89	28.30	0.50	44.45	1.90	66.07	Catholic
Ghana	21.80		4.8	0.47	42.77	2.77	0.71	1.10	60.00	Other Christian

Table 13 (continued)

Home country	Age at first birth	Non-marital fertility	Fertility rate	Human development index	Gini coefficient	Population growth	GDP per capita	GDP growth (30-year average)	%Aged 15–64	Dominant religion
Greece	29.20	3.00	1.2	0.86	34.27	1.00	31.67	2.00	66.20	Orthodox Christian
Guatemala	20.30		4.6	0.56	53.70	2.27	2.85	1.17	58.00	Catholic
Guinea	18.80		5.8	0.34	43.27	3.90	0.39	0.70	54.00	Muslim
Guyana	20.80		3.1	0.61	43.20	0.30	1.51	1.60	63.27	Other
Haiti	22.20		4.3	0.40	59.50	2.00	0.73	−0.60	60.10	Catholic
Honduras	20.10		4.2	0.60	55.27	2.60	1.82	1.37	59.50	Other Christian
Hungary	28.20	20.70	1.3	0.81	30.00	−0.10	15.41	2.20	68.20	Catholic
India	19.90		3.3	0.52	36.77	2.00	1.02	3.60	64.90	Other
Indonesia	22.50		2.5	0.60	37.60	1.50	2.25	4.27	66.50	Muslim
Ireland	29.80	22.30	1.9	0.90	34.27	0.50	60.46	3.50	67.27	Catholic
Israel	27.30	6.29	2.9	0.87	39.20	3.50	27.65	1.90	62.20	Other
Italy	27.70	8.10	1.3	0.85	36.00	0.10	38.49	1.70	65.90	Catholic
Jamaica	21.20		2.6	0.69	45.50	0.80	5.44	0.30	62.27	Other Christian
Japan	29.40	1.20	1.4	0.88	24.87	0.40	38.46	2.10	64.00	Other
Jordan	24.90		4.1	0.68	37.70	5.57	3.60	1.60	59.87	Muslim
Kazakhstan	27.60		1.8	0.71	30.87	−0.70	8.51	0.20	71.00	Orthodox Christian
Kenya	19.80		5.2	0.47	47.70	3.20	0.78	0.50	55.10	Other Christian
Latvia	26.40	29.90	1.3	0.77	36.27	−1.30	14.91	1.30	69.50	Catholic
Liberia	19.10		5.9	0.30	52.60	−2.20	0.22	−2.00	52.70	Other Christian
Lithuania	26.60	12.80	1.4	0.78	35.77	−0.40	14.10	−0.50	69.70	Catholic
Mexico	21.30	37.14	2.7	0.75	51.60	1.90	10.23	1.70	65.20	Catholic
Morocco	25.40		2.7	0.57	40.87	1.70	2.77	2.37	66.07	Muslim
Netherlands	28.90	15.50	1.7	0.89	30.87	0.70	52.96	1.90	67.40	Other
New Zealand	27.70	40.72	2	0.91	36.20	1.70	30.44	1.17	66.40	Other Christian
Nicaragua	19.70		3.1	0.57	52.27	2.37	1.16	−0.20	63.77	Catholic
Nigeria	20.90		6.1	0.42	42.87	2.50	1.37	1.00	55.87	Muslim
Norway	28.40	47.60	1.8	0.94	25.80	0.50	94.76	2.60	66.00	Other Christian
Pakistan	22.70		5	0.49	31.17	2.37	0.99	2.37	60.37	Muslim
Panama	21.10		2.7	0.76	54.87	2.00	6.79	2.77	64.20	Catholic
Paraguay	22.90		3.5	0.64	53.20	2.37	2.56	1.50	65.40	Catholic
Peru	22.30		2.8	0.72	50.50	1.90	4.48	1.10	65.07	Catholic
Philippines	23.10		3.8	0.64	44.00	2.27	1.85	1.37	61.10	Catholic
Poland	26.60	9.50	1.3	0.80	34.87	0.30	13.85	2.70	71.57	Catholic
Portugal	27.40	18.60	1.6	0.80	38.50	0.10	22.92	2.50	65.77	Catholic

Table 13 (continued)

Home country	Age at first birth	Non-marital fertility	Fertility rate	Human development index	Gini coefficient	Population growth	GDP per capita	GDP growth (30-year average)	%Aged 15–64	Dominant religion
Romania	26.00	19.70	1.3	0.77	32.10	−0.50	9.30	3.27	70.40	Orthodox Christian
Russia	24.60		1.2	0.72	43.70	0.10	11.83	−0.80	71.77	Orthodox Christian
Senegal	21.40		5.4	0.41	39.20	2.77	1.09	0.20	53.87	Muslim
Sierra Leone	19.00		6.3	0.32	42.50	−0.50	0.35	0.20	54.50	Muslim
Singapore	29.40		1.6	0.85	42.50	2.90	37.60	5.00	77.00	Buddhist
Slovakia	27.30	12.60	1.3	0.82	25.80	0.40	18.21	0.90	71.57	Catholic
Spain	29.30	11.10	1.3	0.86	34.70	0.30	35.22	2.10	67.70	Catholic
Sri Lanka	22.60		2.2	0.66	41.10	1.10	2.01	3.37	67.20	Buddhist
Sweden	28.60	53.00	1.5	0.89	25.00	0.60	51.95	1.60	64.77	Other Christian
Switzerland	30.20	6.80	1.5	0.87	33.70	0.90	64.33	1.10	67.77	Catholic
Thailand	23.00		1.7	0.40	34.60	3.27	0.50	0.90	55.10	Other Christian
Togo	20.00		5.4	0.43	34.37	2.37	0.45	−0.40	56.00	Other
Turkey	22.90	2.80	2.5	0.68	41.20	1.70	9.94	2.37	67.07	Muslim
Uganda	18.90		6.9	0.42	42.60	3.27	0.45	0.90	48.10	Catholic
Ukraine	23.10		1.1	0.71	27.60	−0.20	3.90	−1.90	70.77	Orthodox Christian
Uzbekistan	23.80		2.6	0.62	36.70	2.20	1.02	−0.40	68.77	Muslim
Vietnam	22.60		2	0.57	37.77	1.90	1.05	4.20	69.27	Buddhist
Zambia	19.20		6	0.40	50.70	2.77	1.13	−1.10	50.77	Other Christian

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