



# Origin and residential influences on the first partnership choices of the children of immigrants in Norway

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Kenneth Aarskaug Wiik and Jennifer A. Holland

*Kenneth Aarskaug Wiik and Jennifer A.  
Holland*

## **Origin and residential influences on the first partnership choices of the children of immigrants in Norway**

**Abstract:**

Using Norwegian register data on migrant-background individuals born 1985 to 2001 who were either native born or who immigrated as children or teens, in combination with data from the World Marriage Database, we investigate how residential partner markets and marriage behavior in countries of origin shape partner choice and choice of union type in Norway. Results from cross-classified multilevel hazards models confirmed that a higher share of “co-ethnics” in the county of residence was negatively related to exogamy and positively related to cohabiting endogamously. Further, a pattern of less traditional partnership behavior in countries of origin was associated with less traditional behavior in Norway. More specifically, a later singulate mean age of marriage (SMAM) in countries of origin was positively related to cohabitation, whereas those originating from a country with a higher share of unmarried in ages 25 to 29 were less prone to marry endogamously. These associations varied by ages at arrival and gender. Taken together, our results provide evidence that norms and behaviors in countries of origin continue to shape the partnership behaviors of young migrant-background individuals, even among those who were born and raised in Norway.

**Keywords:** Partner choice; Partnership markets; Countries of origin; Cohabitation; Marriage; The second generation; Childhood immigrants; Norway;

**JEL classification:** J10, J12, J15, Y8

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**Address:** Kenneth Aarskaug Wiik, Statistics Norway, Research Department. E-mail: kaw@ssb.no  
**Address:** Jennifer A. Holland, Erasmus University Rotterdam, Dept. of Public Administration and Sociology. E-mail: j.a.holland@essb.eur.nl

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## Sammendrag

Til tross for økende utbredelse av samboerskap i vestlige mottakerland, fokuserer det meste av forskningen på familieatferden til innvandrere og deres barn kun på ekteskap. Og selv om studier bekrefter at innvandrere og etterkommere er svært heterogene når det gjelder landbakgrunn, og noen studier finner at familieatferd i opprinnelsesland fortsetter å påvirke holdninger til familie og samliv, vet vi fortsatt lite om sammenhengen mellom familieatferd i opprinnelsesland og faktisk atferd i mottakerlandet. I denne artikkelen bruker vi norske registerdata om personer med innvandrerbakgrunn født 1985 til 2001 som enten var født i Norge eller som innvandret som barn eller tenåringer, i kombinasjon med FN-data om ekteskapsmønstre i opprinnelsesland, og undersøker hvordan ekteskapsadferd i opprinnelsesland former valg av partner og type samliv. I tillegg ser vi på betydningen av lokale partnermarkeder, det vil si andelen av befolkningen i bostedsfylket som har samme landbakgrunn. Vi skiller mellom endogame (partner har samme landbakgrunn) og eksogame (partner fra et annet bakgrunnsland eller partner uten innvandrerbakgrunn) første samliv inngått i Norge i perioden 2005 til og med 2019, det være seg samboerskap eller ekteskap.

Resultater fra kryssklassifiserte flernivå forløpsmodeller bekreftet at norskfødte med innvandrerforeldre og innvandrere som kom til Norge i grunnskolealderen eller yngre var mindre tilbøyelige til å inngå endogame første samliv, og mer tilbøyelige til å inngå eksogame samboerskap, enn de som innvandret i eldre aldre, kontrollert for forskjeller i opprinnelsesland, andelen «landsmenn» i bostedsfylket og andre relevante sosioøkonomiske og demografiske kjennetegn. Videre fant vi at det var en negativ sammenheng mellom en høyere andel personer med samme landbakgrunn i bostedsfylket og eksogame partnervalg. En høyere andel «landsmenn» i bostedsfylket var derimot positivt relatert til endogame samboerskap. Som forventet bekreftet resultatene at mindre tradisjonell ekteskapsadferd i opprinnelseslandet henger sammen med mindre tradisjonell atferd i Norge: En senere gjennomsnittlig ekteskapsalder for de som gifter seg før 50 år i opprinnelseslandet (SMAM) økte tilbøyeligheten for å velge samboerskap, mens personer med bakgrunn fra land med en høyere andel ugifte i alderen 25 til 29 var mindre tilbøyelige til å gifte seg endogamt. Selv om disse sammenhengene varierte med innvandringsalder og kjønn, understreker våre resultater at betydningen av normer og atferd i opprinnelseslandet fortsatt er av betydning, også blant dem som ble født i Norge eller ankom Norge som små barn.

# 1. Introduction

## 1.1. Background and aims

The family behaviors of migrant-background individuals are central for our understanding of social distance between groups and can be a key mechanism for economic progression and cultural integration. Inter-marriage between natives and immigrants has been widely studied (Kalmijn, 1998, Song, 2009), but other aspects of family behavior, like the choice of cohabitation rather than direct marriage, may also be indicators of societal integration (Andersson et al., 2017; Kulu & Gonzales-Ferrer, 2014). Choosing cohabitation as a first union among migrant-background individuals, even when they partner endogamously, may signal adaptation to receiving country's union formation patterns within Western contexts where late marriage and non-marital cohabitation are increasingly common.

The choice to cohabit or marry directly and the choice of a partner are influenced by both individual- and contextual-level factors. Socioeconomic and cultural resources shape the partner and partnership preferences of both majority and migrant-background individuals (Kalmijn, 1998; Schwartz, 2013). Partnership markets may constrain these choices, via the absolute number of potential endogamous partners in Norway, but also through the distribution of "co-ethnics" in one's region of residence or one's educational or working spheres.<sup>1</sup> Partnership choices of immigrants and their descendants may also be influenced by the dominant family formation regimes in their countries of origin. Accounting for the sustained role of behavior and norms in countries of origin is also important for understanding union and family formation dynamics playing out for the children of immigrants in Norway.

Using Norwegian longitudinal register data on all migrant-background individuals born 1985 through 2001 who were native-born (i.e., the second generation) or who immigrated as children or teens (i.e., generation 1.5), we study relations between partner choice and the formation of marital and non-marital first unions occurring between 2005 and 2019 (inclusive). Despite the increasing prevalence of cohabitation in Western receiving countries, most research on the family behavior of the children of immigrants misses out on this union type (Kulu & Gonzales-Ferrer, 2014; Song, 2009). Also, these data allow us to assess the formation of endogamous or exogamous first partner choice in terms of partners' migrant-background (i.e., a partner born abroad and/or with foreign-born parents versus a native-born partner with native-born parents) as well as (parents') country of birth among the children of immigrants originating from a wide array of countries. By aggregating individual-level information contained in the population registers up to the county level we estimate the proportion of

individuals from the same country of origin living in proximity to an individual, allowing us to approximate residential partnership markets.

We supplement these population registers with information from the World Marriage Database (UN Dept. of Economic and Social Affairs Population Division, 2017), to capture union and family formation patterns in countries of origin. From the World Marriage Database, we derive information about the mean age of marriage for those marrying before age 50 (the SMAM) and the percentage of men and women married by age 25 to 29, i.e., measures capturing the average timing of marriage and the importance of marriage in the early adult life course in countries of origin. Using multilevel discrete-time hazard models, we assess the relative importance of individual attributes, partnership markets and the indirect influences of family formation regimes in countries of origin for the choice of direct marriage or cohabitation, partner choice, and the timing of these unions in Norway, a context on the forefront of family change with high levels of cohabitation and nonmarital fertility.

## **1.2. Partner choice and union type**

Exogamy, or partnering with someone outside one's ethnic or national group, is both an indicator of and a mechanism driving the diminishing of social boundaries and increasing socioeconomic integration between groups in diverse societies (Kalmijn, 1998; Kulu & González-Ferrer, 2014; Dribe & Nystedt, 2015; Schwartz, 2013). The timing of union formation is also a crucial indicator and mechanism for integration. In Northern and Western European contexts, the age at marriage and first childbirth have risen considerably in the last six decades (Andersson, Thomson & Duntava, 2017; Sobotka & Toulemon, 2008). Among immigrants and their children, particularly those with origins in contexts where norms favor younger ages of family formation, postponing marriage may indicate adaptation to the standard timing within the country of residence (Alba, 2005; De Valk & Liefbroer, 2007; Holland & De Valk, 2013). Postponement may also be a strategy for economic and social integration. Within contexts with late ages of family formation, greater emphasis may be placed on pursuing further education, establishing oneself on the labor market and securing economic independence for young people (Bracher & Santow, 1998; Buchmann & Kriesi, 2011; Schofer & Meyer, 2005). As early childbearing is negatively associated with education and later labor market participation, particularly for women (Cohen, Kravdal & Keilman, 2011), strategies for economic success in countries of residence may also include postponing family formation (Adserà & Ferrer, 2016; Dale, Lindley & Dex, 2006).

In most Western industrialized countries, as marriage has been increasingly postponed or foregone, cohabitation has increased both as a form of intimate partnership and as a context for parenthood

(Perelli-Harris et al., 2012). In the Nordic countries, cohabitation before marriage is nearly universal, and more first births occur to cohabiting than to married couples (Holland, 2013; Noack et al., 2014).

In such a context, choosing cohabitation instead of marriage as first union and deferral of first marriage among migrant-background individuals could signal adaptation of the receiving country's family formation patterns and norms (De Valk & Liefbroer, 2007), irrespective of partner choice. To the extent that the preferred timing of union formation is stratified by country of (parental) origin (Holland & De Valk, 2013), individuals seeking partners at particular ages or life stages may experience homogenous partnership markets, limiting the extent to which exogamy is possible. This "temporal separation" in partnership markets may contribute to higher levels of endogamy in partnerships formed by migrant-background individuals in early adulthood, and higher levels of exogamy in partnerships formed later. Exogamy may also be a characteristic of a longer partner search, whereby those who do not find a partner within their national or ethnic group "cast a wider net" (Soehl & Yahirun, 2011; Wiik & Holland, 2018).

So too might differences in timing preferences shape the choice of first union. If both cohabitation and later partnership formation are preferred by majority populations, the partnership pool at younger ages may include more endogamous partners and partners favoring marriage. Indeed, Wiik, Dommermuth and Holland (2021) found that higher shares of exogamous unions in Norway were cohabitations. This was particularly evident among the migrant-background individuals who partnered with a majority-background individual, who tended to follow the majority pattern by choosing cohabitation as first union. Still, our knowledge about how such timing preferences might influence partner choice in first non-marital unions is limited. Soehl and Yahirun (2011) included cohabitation in their analysis of partner choice and first union timing for their German sub-sample. However, their emphasis was on the role cohabitation plays in the first unions of Germans without a migrant background. In the current study, with data covering the entire population of children of immigrants in Norway originating from a wide array of countries, we can distinguish different patterns of partner choice among both marital and non-marital first partnerships.

## **2. Mechanisms**

### **2.1. Individual- and family-level influences**

Partnership preferences may shift across generations and with duration of residence in Norway. The norms and behaviors in countries of origin may be most salient for immigrants arriving in Norway as (young) adults. With longer duration of residence, the influence of Norwegian family formation norms and Norwegian society more broadly may increase the likelihood of cohabitation (vs. direct marriage)

and exogamy. Indeed, previous research has found that the family formation preferences (Holland & De Valk, 2013) and behaviors (Andersson et al. 2015; Wiik & Holland, 2018) of the second generation more closely resemble those of majority populations, as compared to first generation immigrants. Also, there is evidence that the younger age at arrival, the better are the socioeconomic attainments later in life among childhood immigrants in Norway (Hermansen, 2016). This latter finding could imply that immigrants arriving as small children more often than those arriving at later ages follow the majority pattern of later first marriage, cohabitation, and perhaps also make exogamous partner choices, given that they to larger degree pursue higher education and are active in the labor market.

Socioeconomic status is strongly linked to patterns of partnering and several studies show that establishing oneself in the labor market is an important prerequisite for partnership formation (Bracher & Santow, 1998; Ohlson-Wijk, 2011). Correspondingly, young adults postpone union formation due to longer periods of educational enrollment (Ní Bhrolcháin & Beaujouan, 2012; Thalberg, 2011). Once no longer enrolled in school, however, higher educated individuals are more likely to form partnerships than those with lower completed education (Wiik, 2009). Similar positive associations between labor market activity and union formation have been found for Belgian men of Southern European, Maghrebi, and Turkish origin. Turkish and Maghrebi origin women, in contrast, were more likely to enter a first union from inactivity and unemployment (Van den Berg, Neels, & Woods, 2021).

Also, education positively correlate with secularism, individualism and non-materialist values, increasing the likelihood that a first partnership will occur later and be a cohabitation rather than direct marriage (Blossfeld & Huinink 1991; Lesthaeghe & Surkyn 1988; Van Bavel 2010). Increasing educational homogamy in diverse, Western societies may suggest that educational attainment (and socioeconomic status more broadly) is an important identifier in partnership markets, perhaps trumping ethnic background (Kalmijn, 2012; Schoen & Weinick, 1993; Schwartz, 2010). This mechanism may be particularly important for women's exogamy. Second-generation women in Norway (Steinkellner, 2017) and across Europe outperform second-generation men in education and when entering the labor market (Heath, Rethon and Kilpi, 2008), which may lead higher educated migrant-background women to postpone partnerships, diversify their partnership markets and lead to partnership matches on attributes other than ethnic origin, such as education.

Patterns of female age-hypergamy in the timing of first partnerships have been long documented (Ní Bhrolcháin, 1992; Ugglá & Wilson, 2020). However, the choice of partnership (cohabitation or direct marriage) and the choice of a partner (endogamy versus exogamy) may also be gendered. Women socialized within more gender-differentiated family contexts may face greater familial social control (Foner, 1997), particularly when it comes to partnering and reproductive behavior

(Furstenberg, 2019; Wachter & De Valk, 2020). Correspondingly, there is evidence that the level of parental involvement in children's marriage is greater for immigrant women than men (van Zantvliet et al. 2014), increasing the likelihood of endogamous partnerships and early direct marriage as compared to men.

On the other hand, the influence of norms and the dominant family formation practices in Norway may have a larger influence on women's preferences and behaviors. In a study of second-generation Turkish women in Germany, Idema and Phalet (2007) found that daughters showed greater shifts toward egalitarian values, while sons remained more conservative in their gender-role norms (although this relationship was somewhat mediated by other measures of acculturation and parental pressure). Residing in a gender-equal society also influences the attitudes of parents (Goldscheider, 2007) and thereby socialization processes. This implies that immigrant parents residing in such societies, particularly those with longer duration of residence, might express approval of cohabitation, later union formation and exogamy for sons and daughters alike.

Taken together, we hypothesize that:

H<sub>1</sub>: Second-generation immigrants as well as those who arrived in Norway in kindergarten (0 to 5 years) and primary school ages (6 to 12 years) will be more likely to cohabit and to form exogamous rather than endogamous cohabiting first partnerships compared to individuals who immigrated as teens, net of differences in countries of origin, counties of residence, and sociodemographic characteristics.

## **2.2. Partnership markets**

Net of individual and family characteristics, the context in which individuals seek partners will shape the timing and types of unions formed. Although there has been an increase in couples who meet online (Danielsbacka, Tanskanen, & Billari, 2020), and this dating arena has increased rates of interracial couples in the U.S. (Thomas, 2020), the chances of partnering endogamously or exogamously are contingent upon geographical proximity and meeting a partner in day-to-day life (Kalmijn, 1998; Puur, Rahnu, & Tammaru, 2021). Group size within Norway will influence the availability of co-ethnic partners; we would expect that, the smaller the group, the less likely an individual will partner endogamously. Beyond simply a question of absolute numbers, the distribution of co-ethnics may not be equal across regions of Norway. In Norway, as in the rest of Europe, immigration is primarily an urban phenomenon (Castles & Miller, 2003; De Valk, Huisman, & Noam, 2011).

On the one hand, this would suggest that the likelihood of partnering with a majority individual is higher in non-urban regions, while the likelihood of partnering with an individual from the same

country of origin is higher in more diverse urban contexts, net of absolute group size. However, exogamy with other migrant-background individuals may also be higher in diverse urban partnership markets. While their measure of marriage markets was crude (indicating whether someone lived in one of the three largest municipalities in Norway and Sweden), Wiik and Holland (2018) found that urbanites were more likely to marry someone from the same global region of origin but also more likely to marry a migrant-background spouse from a different region of origin. Refining this measure to capture the share of co-ethnics within a residential region (county) will provide a more nuanced understanding of the structural factors that influence partner choice and the duration of the search process. Moreover, the share of co-ethnics within a given county might also proxy for the degree of social control within ethnic sub-groups. For instance, if cohabitation and/or out-partnering is not accepted, a higher share of co-ethnics may be associated with a lower propensity to cohabit and/or to partner exogamously. As such, our second hypothesis is:

H<sub>2</sub>: The higher the share of individuals originating from the same country residing within a county, the more likely an individual will be to partner endogamously and less likely they will be to partner exogamously.

To be sure, partnership markets may extend beyond an individual's area of residence. Those in education or employment may be more likely to find a potential partner in their school- or work-setting (Puur et al., 2021). Educational enrollment may expose individuals to a more diverse partnership market than their residential region. Given patterns of stratification by migrant-background status in higher education, those attending university may encounter majority-dominated partnership markets (Kalmijn, 2012). The influences of higher education may thus sustain beyond the university and into the (early) working life, as migrant-background individuals sort into majority-dominated careers and workplaces. While it is difficult to measure the continuing influence of university education on one's social network and the distribution of co-ethnics within employment contexts, highest level of education may serve as a proxy for a higher likelihood of majority-dominated school, work or social settings, in addition to the individual-level associations described above.

### **2.3. Family formation regimes in countries of origin**

While partner, partnership type and union timing preferences are undoubtedly shaped by individual characteristics, partnership markets and the dominant Nordic family system, family systems dominant in the country of origin at the time of (parents') immigration may continue to shape preferences and expectations of immigrants and their descendants in Norway. Even among the children of immigrants, cultural norms, practices and behaviors transmitted through family, friends and wider social networks in Norway and in the parents' countries of origin may shape both preferences and behaviors. The

children of immigrants, and particularly those arriving as small children and the second generation, thus inhabit a “sociocultural middle-ground”, positioned at the crossing of influences of their countries of parental origin and their country of birth (Foner, 1997; Holland & De Valk, 2013).

Currently, around two-thirds of the Norwegian second generation originate from countries in Asia, Middle-East and North Africa (MENA, including Turkey) and Sub-Saharan Africa, with Pakistan (9%), Somalia (8%), Iraq (6%), Vietnam (5%) and Turkey (4%) as the five largest origin countries (Statistics Norway 2020a). These (apart from Vietnam) and many other countries in these world regions have a predominantly Islamic cultural heritage (Dribe & Lundh, 2011; Elgvin & Tronstad, 2013), characterized by patriarchal social norms (Inglehardt & Norris, 2003) and traditional family formation patterns with early and universal marriage and high fertility (De Valk & Milewski, 2011; United Nations, 2017).

Although there is recent evidence of a gradual secularization among Norwegian immigrant-origin youth, this is less pronounced for Muslims (Friberg & Sterri, 2021). Marriage without prior cohabitation is strongly correlated with religiousness (Lehrer, 2004; Wiik, 2009), and in Norway this union type is most common among the children of immigrants originating from countries in South Asia and MENA (Wiik et al., 2021). Research on the Turkish second generation, the largest single country of origin group in Western Europe, show that they follow a traditional pattern of union formation (Kalmijn & Kraaykamp, 2018; Milewski & Hamel, 2010; Wachter & De Valk, 2020), and that the level of parental involvement is strong (Buunk, 2015; van Zantvliet et al., 2014).

In 2020, 30% of the Norwegian second generation originated from non-Nordic European countries, among which 15% originated from EU/EAA countries in Eastern Europe and 10% from non-EU/EAA Eastern European countries. Poland was the single largest Eastern European country of origin, accounting for nearly 8% of the second generation (Statistics Norway, 2020b). Eastern European countries such as Poland, Russia, Bulgaria, Romania and Ukraine are characterized by a traditional pattern of partnership behavior, with a low proportion cohabiting and a high share of married. In Latvia, Hungary, Slovakia and the Czech Republic, on the other hand, it is more common to cohabit (Noack et al. 2014).

To be sure, non-formal partnering is widespread and accepted in some parts of the global South, most notably in South and Central America (Esteve, Lesthaeghe, & López-Gay 2012). In Asia, marriage is universal and the relationship between marriage and childbearing remains strong, but cohabitation is increasingly popular in some East and South-East Asian countries, such as Japan, China and the Philippines (Jones & Yeung 2014; Raymo, Iwasawa, & Bumpass 2009; Yu & Xie 2015). In Sub-Saharan African countries, on the other hand, it is not uncommon to live together without being married (Hattori & Dodoo 2007) and cohabitation is increasingly prevalent in urban and

non-Muslim dominated areas (Popoola & Ayandele 2019). Swedish second-generation women originating from South and Middle America, Sub-Saharan Africa, East and South-East Asia, as well as Iran, married at later ages than those with Swedish-born parents (Andersson et al. 2015).

Distinguishing the differential influences of countries of origin and destination has been fruitful in studies of structural integration (e.g., van Tubergen 2010) and perceptions of ideal timing of family formation (Holland & De Valk 2013) as well as the ideal family size (Mussino & Ortensi 2018). Holland and De Valk (2013) used the singulate mean age of marriage (SMAM) as a proxy for the dominant family systems in European countries of residence and global countries of origin for a sample of first- and second-generation immigrants living in Europe. The SMAM measures the average number of years spent single among those who marry by age 50 (Hajnal 1953; Preston, Heuveline & Guillot 2001), and is thus a macro-level proxy for the country-specific “standard” timing of marriage or family formation, more generally, in context where marriage is universal. Holland and De Valk (2013) found that the dominant patterns of marriage in both countries of origin and residence shaped individuals’ preferences for timing of marriage, although the influence of the family formation regime in countries of origin decreased by duration of residence and immigrant generation. A higher SMAM in countries of origin implied later timing preferences for marriage and parenthood (Holland & De Valk 2013). Correspondingly, we hypothesize that:

H<sub>3a</sub>: A higher SMAM in countries of origin is associated with a higher propensity to cohabit rather than to marry.

H<sub>3b</sub>: Less traditional first union formation behavior in countries of origin (i.e., higher SMAM) is positively related to cohabiting exogamously and negatively related to endogamous marriage.

As for family formation ideals (Holland & De Valk 2013), we also expect that the influence of the family formation regimes in countries of origin may decrease by immigrant generation and, among the 1.5 generation, by duration of residence in Norway:

H<sub>4</sub>: The influence of family formation regimes in countries of origin is lower for second-generation immigrants and those who immigrated at younger ages as compared to those who arrived at older ages.

Socialization processes, transmitting country of (parental) origin norms regarding partner choice and type of first union from, may intersect with individual characteristics. Research on European young adults whose parents were born in Turkey and Morocco (countries with younger ages of marriage) show that parental involvement in children’s first family formation is greater for women than men (van Zantlivet et al. 2014; Wachter & De Valk, 2020). This gendered transmission of family norms and a preference for endogamy and marriage may both be a result of more conservative value systems. While we cannot measure value systems directly, we can investigate whether there are gender

differences in the strength of the association between family formation regimes in countries of (parental) origin and family formation behaviors. We hypothesize that:

H<sub>5</sub>: The association between the family formation regimes in countries of origin and first partnership behavior is stronger for women than men.

### **3. Data and method**

#### **3.1. Sample and procedure**

We used longitudinal data from Norwegian population registers, including demographic information on marriage, age, dates of immigration and emigration, gender and (parents') country of birth. The introduction of a unique address for all dwellings made it possible to identify cohabiting unions from 2005 onwards. Cohabiting couples are defined as a man and a woman aged 18 years or older residing in the same dwelling (shared housing arrangements excluded), who are not relatives or married and whose age difference is less than 16 years. If couples have common children, this latter rule on age difference does not apply (Falsnes-Dalheim, 2009). We supplemented these population data with longitudinal register data on education, annual total income and place of residence. Such linking of data is facilitated through a system of universal ID numbers. Data on singulate mean ages at marriage (SMAM) as well as the shares married aged 25 to 29 in countries of origin were taken from the World Marriage Database (United Nations, 2017) and merged to the register data using (parents') country of birth.

We focus on all first opposite-sex marital and non-marital unions formed 2005 through 2019, among the total Norwegian migrant-background population born 1985 through 2001 residing in the country at age 18 ( $N = 125,253$ ). Of these, 84,358 (67.3%) were immigrants who arrived prior to age 18, i.e., generation 1.5, and 40,895 (32.7%) were second-generation immigrants, defined as being born in Norway by two immigrant parents. For the second generation sub-sample, if parents' countries of birth differed, the mother's country of birth was used. Our data do not contain information about immigrants' possible previous cohabitations or marriages contracted abroad. To ensure that only unions formed in Norway were considered, we excluded immigrants who arrived aged 18 or older from the analytic sample. And, although these data contain information on same-sex marriages, it was not possible to capture same-sex nonmarital unions using these data.

The dependent variable was made by combining information on union status and partner's country of origin (i.e., own (immigrants) or parents' (second generation) country of birth), and consists of four categories of co-residential partnerships relative to continuing to be unpartnered at any given age: (a) endogamous cohabitation (i.e., with a partner from the same country of origin), (b) exogamous

cohabitation (i.e., with a partner from a different country of origin or a majority Norwegian), (c) endogamous marriage, and (d) exogamous marriage.<sup>2</sup>

To investigate the multiple levels of mechanism shaping the partnership choices and union timing among the children of immigrants born abroad (1.5 generation) and in Norway (2<sup>nd</sup> generation), we ran cross-classified multilevel multinomial hazards models using the GLIMMIX procedure in SAS (Wang, Xie, and Fischer, 2012). In these models, individuals were simultaneously nested in 18 counties of residence (year  $t-1$ ) and 187 countries of origin.<sup>3</sup> We followed each individual from the year he or she turned 18 to the year of any registration of marriage or cohabitation or censoring due to death, emigration or the end of the last year for which we have data (i.e., December 31 2019), whichever came first. As we are focusing on first unions formed from 2005 onwards, the cohorts born 1985–86 were followed from ages 20 and 19, respectively. The duration dependence was age in years (linear and squared terms).

### **3.2. Independent variables**

In multilevel models, we included the SMAM for men and women in (parent's) country of birth when individuals were 18 years old, and this variable was measured continuously in whole years. When data were unavailable in the year they were 18, we used the nearest available year. In alternative models we included a variable measuring the shares of the population aged 25 to 29 in countries of origin who were unmarried. The original variable measuring the percentage married was reversed by subtracting it from 100 and divided into 10 percent groups. This variable was also measured separately for men and women at age 18, or in the nearest available year. We also included a time-varying variable measuring the number of individuals originating from the same country residing in the county, per thousand inhabitants, based on (parents) country of birth as well as annually updated information on county of residence. This variable was measured in the year preceding each annual observation (i.e., year  $t-1$ ).

Next, to capture potential differences across migrant generations and age at arrival, we included a variable measuring whether individuals were: (1) Norwegian born by immigrant parents (i.e., second generation) or whether they had immigrated to Norway in (2) kindergarten age (0 to 5 years), (3) primary school age (6 to 12 years) or (4) at older ages (13 to 17 years). In interaction models, we also included a continuous variable measuring the age at arrival in Norway with values ranging from 0 (including the second generation) through 17.

In gender pooled models we accounted for gender, since the age grading of the timing of first union is gendered (Wiik, 2009) and to explore whether men's and women's partnership choices and union types, as well as the influence of countries of origin, differ. Next, given the importance of education in union formation and partner choice (Blossfeld & Huinink, 1991; Buchmann & Kriesi, 2011; Kalmijn,

2012), we controlled for education level achieved as of October the previous year. This variable has four categories: (1) primary education (10 years or less), (2) secondary education (11-13 years), (3) tertiary education (14+ years), and (4) missing. We also made a variable measuring whether the respondents were enrolled in full-time education (1) or not (0) in year  $t-1$ . Annual income refers to total income before taxes in the year preceding each yearly observation period. The income estimates were adjusted for inflation, and given in whole 10,000s of 2015- Norwegian Kroner. Last, to capture secular trends in union formation and partner choice, we controlled for calendar year of observation.

## 4. Results

### 4.1. Descriptive results

As shown in Table 1, 26% of the children of immigrants born 1985 to 2001 had formed a first co-residential union by December 31, 2019, of which 18% cohabited and 8% had married. Roughly one third of the sample was born in Norway by immigrant parents, whereas 14% had immigrated as small children (0-5 years) and 25% had immigrated at primary school age (6 to 12 years). Twenty-eight per cent of the sample had arrived in Norway between the ages of 13 and 17. Overall, Pakistan, Somalia, Iraq, Afghanistan and Poland constituted the five numerically largest countries of origin represented in Norway among these cohorts of Norwegian childhood migrants and descendants, though there were some gender differences. Notably, Afghanistan was the largest single country of origin among men. In the period 1996 to 2017, 9,200 minor refugees were granted permanent residence in Norway, of whom 84% were boys and 46% were from Afghanistan (Kirkeberg & Lunde, 2019). Pakistan was the largest country of origin among women. The distributions of the 50 largest countries of origin represented in Norway are presented separately for men and women in Appendix Table A1, together with their corresponding mean SMAMs as well as the shares of unmarried aged 25 to 29.

Table 1 further confirms that 48% of individuals were primary educated, whereas 27% had completed a secondary education and 17% were tertiary educated.<sup>4</sup> Reflecting the increasing rates of young migrant-background women in higher education in Norway (Steinkeller, 2017), higher shares of women had completed a secondary or tertiary education than men. Overall, nearly 8% of these migrant-background individuals had missing education in the year preceding union formation or censoring, largely due to (recently-arriving) immigrants who have not (yet) gotten schooling in Norway or whose education taken abroad has not been recognized by the Norwegian Agency for Quality Assurance in Education (NOKUT). Next, the mean age of the sample was 23 years and the mean year of observation was 2017. Turning to country of origin and county of residences characteristics in Table 1, the mean SMAM in countries of origin was 26.3 years, with values ranging

between 15 and 37 years for the full sample. The mean SMAM was lower for women (24.5 years) than men (27.9 years). The children of immigrants lived in counties with on average 7.7 per thousand inhabitants originating from the same country as themselves.

**Table 1.** Descriptive statistics. Migrant-background individuals born 1985-2001 who were either native-born or who immigrated prior to age 18 ( $N=125,253$ )

Variable	Full Sample	Women	Men
	%/M(SD)	%/M(SD)	%/M(SD)
<i>Individual characteristics</i>			
Union status, year $t$			
Single	73.63	69.51	77.20
Cohabiting, endogamous	4.31	5.27	3.49
Cohabiting, exogamous	13.77	15.40	12.36
Married, endogamous	6.00	7.04	5.11
Married, exogamous	2.28	2.79	1.84
Migrant generations			
Born in Norway	32.65	34.16	31.34
Immigrated, preschool age	14.12	14.85	13.49
Immigrated age 6-12	25.04	26.09	24.13
Immigrated age 13-17	28.18	24.89	31.03
Ten largest countries of origin			
Pakistan	7.99	8.32	7.71
Somalia	7.61	7.70	7.53
Iraq	6.24	6.15	6.33
Afghanistan	6.15	2.82	9.04
Poland	5.09	5.52	4.98
Vietnam	4.32	4.50	4.17
Turkey	3.39	3.51	3.28
Kosovo	3.19	3.31	3.09
Iran	3.16	3.17	3.14
Sri Lanka	3.15	3.24	3.08
Other countries	50.27	51.76	47.65
Number of countries	187	184	176
Education level, year $t-1$			
Primary	48.39	43.06	52.96
Secondary	27.15	29.15	25.43
Tertiary	16.63	20.41	13.40
Missing	7.83	7.38	8.21
Enrolled in education, year $t-1$	46.79	51.19	42.97
Income, 10,000s of 2015-NOK, year $t-1$	16.35 (17.68)	14.84 (15.64)	17.66 (19.17)
Age, year $t$	23.09 (3.86)	22.84 (3.76)	23.30 (3.94)
Calendar year	2017.49 (3.00)	2017.18 (3.28)	2017.76 (2.70)
<i>Country of origin and county of residence characteristics</i>			
Co-ethnics/1,000, year $t-1$ <sup>a</sup>	7.67 (8.69)	7.77 (8.88)	7.58 (8.52)
SMAM <sup>b</sup>	26.29 (3.40)	24.47 (3.26)	27.86 (2.64)
<i>N</i> individuals (%)	125,253	58,109 (46.39)	67,144 (53.61)

<sup>a</sup> Number of individuals originating from the same country per 1000 inhabitants in county of residence, year  $t-1$  <sup>b</sup> SMAM=Singulate mean age at marriage in country of origin when individuals were 18 years old.

Descriptive statistics for partnered migrant-background individuals by union types and gender are presented in Table 2. First, from the bottom row of Table 2 we see that 22,649 (69%) of these first unions were nonmarital and that a slightly higher share of women (32%) married compared to men (30%). Among those who married directly, 72% (women) and 74% (men) had a spouse originating from the same country. Among their counterparts who chose cohabitation, on the other hand, 75% (women) and 78% (men) had partnered someone originating from a different country or from Norway (with no migrant-background). Sixty-nine per cent of these exogamous cohabiting unions were with a majority partner (Appendix Table A2). Among those who married exogamously, on the other hand, one-third chose a majority partner, whereas 58% married an immigrant from a different country of origin. Also, a larger share of women (37%) than men (29%) had a majority spouse (Appendix Table A2).

**Table 2.** Descriptive statistics by union types and gender. Partnered migrant-background individuals ( $N=33,026$ ).

Variable	Women		Men	
	Marriage %/M(SD)	Cohabitation %/M(SD)	Marriage %/M(SD)	Cohabitation %/M(SD)
<i>Individual characteristics</i>				
Type of partner				
Endogamous	71.57	25.49	73.50	22.01
Exogamous	28.43	74.51	26.50	77.99
Migrant generations				
Born in Norway	40.79	23.73	35.84	24.71
Immigrated, 0-5 yrs	16.75	17.65	14.04	16.51
Immigrated, 6-12 yrs	21.76	30.47	19.66	27.46
Immigrated, 13-17 yrs	20.69	28.15	30.46	31.32
Education, year $t-1$				
Primary	31.93	42.87	42.81	47.99
Secondary	32.77	29.88	28.87	28.91
Tertiary	31.00	22.26	24.50	17.34
Missing	4.29	5.00	3.82	5.76
Enrolled in education, year $t-1$	29.95	47.81	18.69	35.64
Income, 10,000s of 2015-				
NOK, year $t-1$	25.85 (17.61)	18.30 (15.14)	36.90 (21.88)	23.66 (19.83)
Age, year $t$	24.34(3.23)	23.09(3.28)	25.98(3.04)	24.13(3.37)
Calendar year	2013.78(3.78)	2014.52(3.61)	2014.60(3.31)	2014.91(3.34)
<i>Country of origin and county of residence characteristics</i>				
Co-ethnics/1000, $t-1$ <sup>a</sup>	10.50(11.83)	6.13(7.08)	10.60(11.88)	6.22(7.22)
SMAM <sup>b</sup>	23.85(2.23)	24.76(3.31)	27.25(2.24)	28.16(2.72)
<i>N</i> individuals (%)	5,712 (31.7)	12,006 (68.3)	4,665 (30.3)	10,643 (69.7)

<sup>a</sup> Number of individuals originating from the same country per 1,000 inhabitants in county of residence, year  $t-1$ . <sup>b</sup> SMAM=Singulate mean age at marriage in country of origin when individuals were 18 years old.

Men, and particularly women, born in Norway by immigrant parents (i.e., the second generation) constituted a higher share of those who married directly than did childhood immigrants. Among those who cohabited, on the other hand, larger shares were immigrants who arrived in Norway before they turned 18. Last, the descriptives in Table 2 confirm that men and women marrying directly earned more, held slightly higher levels of education and were less often enrolled in education than their cohabiting counterparts. These latter findings partly reflect that those choosing marriage on average were older than those cohabiting. In line with our expectations, we further note from Table 2 that women as well as men marrying directly originated from countries with 0.9 year lower SMAM compared to those forming first non-marital unions. Those who married also lived in counties in Norway with, on average, 4.4 more individuals per thousand inhabitants originating from the same country than those cohabiting.

## **4.2. Multivariate results**

Table 3 presents results from the discrete-time multilevel multinomial model of first union formation, accounting for differences in the partnership behavior across country of (parental) origin and Norwegian counties of residence. In this model we included the singulate mean age of marriage in country of origin and the variable measuring the number of co-ethnics per thousand inhabitants in the county of residence. Full model results are given in Model 1 of Appendix Table A3.

First, accounting for the heterogeneity of these groups of the Norwegian population, we see from Table 3 that there were some remaining differences across migrant generations with respect to their first partnership behavior. As expected (Hypothesis 1), the second generation and immigrants arriving at younger ages were overall less likely to form endogamous first unions, and more likely to cohabit exogamously than those arriving at later ages. Those who immigrated to Norway at primary school age (6 to 12 years) and later (13 to 17 years) were significantly more likely to marry endogamously at any given age relative to remaining single, compared to second-generation immigrants. Teen migrants were also more likely to marry exogamously relative to remaining single, compared to the second generation. Childhood migrants who arrived at primary school age or earlier (0 to 12 years) were significantly more likely to cohabit exogamously compared to the Norwegian-born children of immigrants, net of differences across countries of origin, counties of residence and individual socio-demographic characteristics. Last, regardless of their age at arrival, childhood migrants were more likely to form endogamous cohabiting unions than the native born.

Separate models for men and women are shown in Appendix Table A4 and confirm that among men there were no statistically significant differences across migrant generations in exogamous

marriage. Also, men who immigrated at preschool age were less likely to marry endogamously than second-generation men, but this difference just failed to reach statistical significance ( $p=0.065$ ).

**Table 3.** Results from discrete-time multilevel multinomial logistic model of first union formation: a) Cohabitation, endogamous, b) cohabitation, exogamous, c) marriage, endogamous, or d) marriage, exogamous (unpartnered=base category). Migrant-background individuals born 1985-2001 who were either native-born or who immigrated prior to age 18 ( $N=125,253$ ).

	Cohabitation, endogamous		Cohabitation, exogamous		Marriage, endogamous		Marriage, exogamous	
	$\beta$	(SE)	$\beta$	(SE)	$\beta$	(SE)	$\beta$	(SE)
Fixed effects								
<i>Individual level</i>								
Migrant generation								
Native-born	<i>Ref.</i>							
Immigrated, 0-5 years	0.34*	(0.06)	0.14*	(0.03)	0.02	(0.04)	0.06	(0.06)
Immigrated, 6-12 years	0.66*	(0.05)	0.15*	(0.02)	0.25*	(0.04)	0.08	(0.06)
Immigrated 13-17 years	1.18*	(0.05)	-0.01	(0.03)	0.67*	(0.04)	0.17*	(0.06)
<i>County-of-residence level</i>								
Co-ethnics/1,000 <sup>a</sup>	0.03*	(0.01)	-0.02*	(0.01)	0.01	(0.01)	-0.02*	(0.01)
<i>Country-of-origin level</i>								
SMAM <sup>b</sup>	0.04*	(0.01)	0.02*	(0.01)	-0.02	(0.01)	0.02	(0.01)
Random effects								
Country of origin					Yes			
Country (county)					Yes			
<i>N</i> Events	5,403		17,246		7,517		2,860	
<i>N</i> Person-years					749,923			
<i>N</i> Countries					187			
<i>N</i> Counties					18			

*Note:* Model controlled for gender, education level  $t-1$ , school enrollment  $t-1$ , annual income  $t-1$ , calendar year, age and age<sup>2</sup>.

<sup>a</sup> Number of individuals originating from the same country per 1,000 inhabitants in county of residence, year  $t-1$  <sup>b</sup> SMAM=Singulate mean age at marriage in country of origin when individuals were 18 years old.

\*  $p < .05$ .

Next, the results of Table 3 confirm that a higher share of co-ethnics in the county of residence in year  $t-1$  was positively related with forming endogamous cohabiting unions at any given age, net of differences across countries of origin and individual characteristics. A similar positive association was found for endogamous marriage, but this association failed to reach statistical significance at the 5%-level. Further, an increase in the share of co-ethnics in the county of residence was negatively related to exogamous marital and non-marital first union formation, net of other characteristics. These findings are in line with Hypothesis 2.

Further, a later SMAM in countries of origin was positively associated with cohabitation (exogamously as well as endogamously) relative to remaining unpartnered at any given age, controlling for differences across countries of origin, counties of residence, and the other included

variables. In other words, the more years those who marry by age 50 in countries of origin spend single prior to marriage, the more likely the children of immigrants from these countries were to cohabit. The associations between the SMAM in countries of origin and endogamous and exogamous marriage failed to reach statistical significance at the chosen level ( $p < .05$ ), though directions of the estimates were as expected (i.e., negative for endogamous and positive for exogamous marriages).

Results from a model including an alternative measure of family formation regimes in countries of origin; the share of the population aged 25 to 29 who were unmarried, are presented in Appendix Table A3 (Model 2). From this model we see that the higher the unmarried share of the populations in these age groups in countries of origin, the more likely the children of immigrants originating from these countries were to cohabit at a given age. Conversely, a lower share of married in ages 25 to 29 in countries of origin decreased the chance of marrying a partner originating from the same country, controlling for differences across countries of origin, countries of residence, and the other included variables.

Taken together, these results are in line with Hypotheses 3a and 3b: A less traditional pattern of union formation in countries of origin, as measured by a later SMAM or a higher share of unmarried in the populations aged 25 to 29, was positively associated with cohabitating endogamously and exogamously, and negatively associated with endogamous direct marriage.

Results for the other variables included in Table 3 are presented in Table A3 (Model 1). Women were more prone to enter any type of first union compared to men. There was an overall positive relationship between level of education and exogamous partner choice. Secondary as well as tertiary educated individuals were also more inclined to marry endogamously than the primary educated. Those whose level of education were missing in the population registers, on the other hand, were less likely to cohabit exogamously or to marry (endogamously and exogamously) as compared to the primary educated. Those enrolled in full-time education in the year preceding each yearly observation period, on the other hand, deferred any type of first union formation. A higher annual income was positively associated with first union formation, regardless of type. Last, we note from Model 1 of Table A3 that the chance of forming endogamous first unions and marrying directly decreased across the observation period (2005 through 2019), whereas exogamous cohabitation became more likely, controlling for differences across countries of origin and the other included variables.

To test the assumption that the influence of union formation patterns in countries of origin varied across migrant generations (Hypothesis 4), we interacted the SMAM with age at arrival (Model 1 of Table 4). In this model, those native born by immigrant parents were grouped with those who arrived in Norway as infants (i.e., less than 1 year old). From Model 1 in Table 4 we first note that there was a statistically significant and positive interaction between the SMAM and age at arrival for endogamous

marriage. In other words, the higher age at arrival in Norway, the less negative was the relation between the SMAM and endogamous marriage. None of the other interaction terms reached statistical significance at the chosen level ( $p < .05$ ). In Model 2 of Table 4, we instead interacted the migrant generations with the SMAM. The results from this model confirm that the overall positive association between marital age in countries of origin and cohabitation was lower among those immigrating at primary school (endogamous cohabitation), preschool age and as teens (exogamous cohabitation), as compared to the native-born children of immigrants. Regarding marriage, on the other hand, the overall negative relation between the SMAM and endogamous marriage was significantly less negative among those immigrating to Norway as teens.

**Table 4.** Results from three discrete-time multilevel multinomial logistic interaction models of first union formation (continued to be unpartnered=base category). Migrant-background individuals born 1985-2001 who were either native-born or who immigrated prior to age 18 ( $N=125,253$ ).

	Cohabitation, endogamous		Cohabitation, exogamous		Marriage, endogamous		Marriage, exogamous	
	$\beta$	(SE)	$\beta$	(SE)	$\beta$	(SE)	$\beta$	(SE)
<b>Model 1</b>								
SMAM <sup>a</sup> , main effect	0.038*	(0.015)	0.024*	(0.007)	-0.046*	(0.015)	0.022	(0.016)
SMAM $\times$ age at arrival <sup>b</sup>	-0.000	(0.001)	-0.001	(0.000)	0.003*	(0.001)	-0.001	(0.001)
<b>Model 2</b>								
SMAM, main effect	0.054*	(0.018)	0.031*	(0.008)	-0.037*	(0.017)	0.024	(0.017)
SMAM $\times$ Immigr., 0-5 y <sup>c</sup>	-0.009	(0.019)	-0.022*	(0.007)	-0.009	(0.002)	0.003	(0.002)
SMAM $\times$ Immigr., 6-12 y	-0.039*	(0.016)	-0.011	(0.006)	-0.009	(0.014)	-0.014	(0.016)
SMAM $\times$ Immigr., 13-17 y	-0.002	(0.015)	-0.019*	(0.007)	0.049*	(0.014)	0.004	(0.017)
<b>Model 3</b>								
SMAM, main effect	0.037*	(0.015)	-0.006	(0.007)	-0.034*	(0.014)	0.005	(0.016)
SMAM $\times$ Gender <sup>d</sup>	0.001	(0.012)	0.032*	(0.005)	0.046*	(0.014)	0.023	(0.014)
<i>N</i> Events	5,403		17,246		7,517		2,860	
<i>N</i> Person-years	749,923							

*Note:* Models controlled for variables included in interaction terms as well as co-ethnics/1000 year  $t-1$ , education level year  $t-1$ , enrolled in school year  $t-1$ , annual income year  $t-1$ , calendar year, gender, age and age squared. Models include random effects for country of origin as well as country of origin within county of residence year  $t-1$ .

<sup>a</sup> SMAM=Singulate mean age at marriage in country of origin when individuals were 18 years old. <sup>b</sup> Native born by immigrant parents = 0 years. <sup>c</sup> Native born by immigrant parents = reference. <sup>d</sup> 0 = men, 1 = women. \*  $p < .05$ .

Next, to assess whether there were gender differences in the influence of family formation regimes in countries of origin (Hypothesis 5), we ran a gender pooled interaction model including an interaction term between the SMAM and gender. The main results from this interaction model are

presented in Model 3 of Table 4. From this model, we first note that there was a positive and statistically significant interaction for exogamous cohabitation. In other words, the general positive association between a later SMAM in countries of origin and exogamous cohabitation was significantly stronger among women than men. Also, a later SMAM in countries of origin was significantly more positively associated with endogamous marriage among women compared to men. That is, women originating from countries with higher marital ages were more prone than their male counterparts to marry someone originating from the same country, relative to remaining single at a given age.

Results from a set of alternative interaction models including the share not married ages 25 to 29 instead of the SMAM, are presented in Appendix Table A5. Overall, the (statistically significant) results from these models corroborate those of Table 4. There were a couple of exceptions, however. First, Model 2 confirms that there was a statistically significant and positive interaction term between the share of unmarried and immigrants arriving at age 6 to 12 for endogamous marriages. In other words, these individuals' transition to an endogamous marriage was less influenced by the share of unmarried in countries of origin as compared to the native born. And, from Model 3 of Table A5 we see that the association between the share of unmarried in countries of origin and exogamous marriage was significantly more positive for women than men.

## **5. Summary and discussion**

In this article, we have used Norwegian register data on all migrant-background individuals born 1985 through 2001 who were native born or who immigrated prior to age 18, in combination with data from the World Marriage Database, to investigate associations between residential partnership markets, family formation regimes in countries of origin and first partnership behaviors. Using multilevel cross-classified discrete-time hazard models, we analyzed endogamous and exogamous partner choice, the timing of union formation and choice of marriage versus cohabitation. To our knowledge, very little research has so far empirically tested whether family formation regimes in countries of origin is related to the actual family behavior of the children of immigrants, net of individual and residential effects. Studying this topic is central for our understanding of immigrant populations' adaptation in receiving societies, and how and to what degree countries of origin continue to shape the behaviors of migrant-background individuals, even among those who were born and raised in their countries of residence.

Few studies on the family behaviors of immigrants and their children have so far included data on unmarried cohabitation (Kulu & Gonzales-Ferrer, 2014; Wiik et al., 2021). Focusing solely on marriage is problematic as cohabitation is widespread and institutionalized in Western receiving countries. In the Nordic countries over 90% of majority individuals choose cohabitation as first union

(Noack et al., 2014), and this union type is related to secularization and individualization of family life (Kreidl & Žilinčiková, 2021; Lesthaeghe, 1998). Marrying without prior cohabitation, on the other hand, is currently minority behavior in Norway, and strongly correlated with religiousness (Wiik, 2009). Including cohabitation in the study of the partnership choices of the children of immigrants informs us on whether they adapt to ongoing behavioral and value changes in their countries of residence, if they follow the norms and behavior of countries of origin or if they forge a hybrid pathway into family life, with influences of countries both of residence and origin.

As we have shown, cohabitation is the modal pathway into partnership for most groups of migrant-background individuals in contemporary Norwegian society, though it is most common among those choosing a majority partner. Regression results confirmed that cohabitation was the preferred first union type for both endogamous and exogamous partnerships, net of differences in countries of origin, countries of residence, and socio-demographic characteristics. The only exception to this finding was among the children of immigrants arriving in Norway after age 12 and partnering exogamously; these young adults were more likely to marry than to cohabit.

The second generation and immigrants arriving at primary school age or younger were overall less likely to form endogamous first unions, and more likely to cohabit exogamously than those arriving at older ages, net of differences in countries of origin, countries of residence, and sociodemographic characteristics. These findings align with studies showing that immigrants with longer durations of residence and second-generation immigrants adopt marital behaviors that are more similar to majority populations, such as intermarriage and the postponement of first marriage (Dribe & Lundh 2008; Wiik & Holland 2018). Our results support the assumptions from structural assimilation theory, claiming that immigrants adopt patterns of family formation more like those of the majority population over time (Gordon 1964). Such adaptation to the family formation regime in the destination country may be a result of active strategies for optimizing socioeconomic success, like participating in higher education and labor market participation (Adserà & Ferrer 2016), or of institutional contexts shared with majority populations, such as educational systems, political institutions and cultural outlets (Huschek et al. 2010; Bernhardt et al., 2007; De Valk & Milewski 2011). As they were born and raised in their countries of residence, second-generation individuals are likely more influenced by the dominant family behaviors in society than first-generation immigrants.

To be sure, exogamous partner choice could also be due to a pattern of “temporal separation”, whereby individuals seeking partners at particular ages or life stages may experience homogenous partnership markets, limiting the extent to which exogamy is even possible. Such a separated partner market may contribute to higher levels of endogamy in partnerships formed in early adulthood, and higher levels of exogamy in partnerships formed later (Soehl & Yahirun, 2011). Exogamy may also be

a characteristic of a longer spouse-search, whereby individuals who do not find a partner within their national or ethnic group may “cast a wider net” (Soehl & Yahirun, 2011; Wiik & Holland, 2018). While we were not able to measure partnership timing preferences, we did account for the share of co-ethnics in residential partnership markets. As expected, a higher share of co-ethnics in the county of residence was positively associated with forming endogamous cohabiting unions and negatively related to exogamous marital and non-marital first union formation. The share of co-ethnics in one’s residential area may be related to the supply of potential partners but may also shape one’s partnership preferences. There was, however, no statistically significant association between the share of co-ethnics living in the county and endogamous marriage. One explanation for this slightly unexpected finding could be that many such marriages occur through other networks, like the (extended) family, religious communities, and co-ethnics living elsewhere in Norway. Further research is needed to assess this issue.

Of course, partnership markets extend beyond one’s residential area. For example, one might meet potential partners in school- or work-settings. Education may play an important role in stratifying work settings and social networks, even beyond the period of enrollment (Kalmijn, 2012; Puur et al., 2021). We found evidence of a positive relationship between level of education and exogamous partner choice among both first cohabitations and marriages. The level of education likely influences partner choice in ways that go beyond simply shaping an individual’s partnership market. For example, given that education operates as a marker of status or future earnings, shared lifestyle or cultural matching (Kalmijn, 2012; Schoen & Weinick, 1993; Schwartz, 2010), being highly educated may be an equally or more important matching criteria than ethnicity or country background. To be sure, education level was positively related to exogamous as well as endogamous marriage, in line with the notion of a general “marriage effect” of higher education (Kalmijn, 2013; Torr, 2011). As for our findings for co-ethnics in one’s residential area, we cannot differentiate education’s influence on an individual’s partnership market from its influence on individual preferences. Still, taken together, these findings do suggest the continued relevance of (physical) partnership markets, even in an era where most couples meet via online dating (Danielsbacka et al., 2020; Thomas, 2019).

A key contribution of this study is a deeper understanding of the extent to which partner choices, choice of union type and timing of first unions are associated with marriage behavior in countries of origin. We hypothesized that a higher singulate mean age at marriage (SMAM) in countries of origin was associated with a higher propensity to cohabit rather than to marry directly. We also expected that less traditional first union formation behavior in countries of origin, as measured by a higher SMAM, would be positively related to cohabiting exogamously and negatively related to endogamous marriage. Taken together, the results of the current paper confirmed these expectations. First, a higher

SMAM was positively associated with cohabitating endogamously and exogamously. Further, results from an alternative analysis, where we instead included the share of unmarried in ages 25 to 29, confirmed that those originating from a country with a higher share unmarried were less prone to marry endogamously and more likely to cohabit. Using both the SMAM and the shares not married by the end of young adulthood provided insight into both the timing and importance of marriage in countries of origin. That is, in contexts where cohabitation is more widespread, and marriage is foregone (rather than postponed), the share of the adult population who remains unmarried within a given age may indicate the centrality of marriage in a society.

These findings align with studies demonstrating that family formation regimes in countries of origin continue to influence family formation timing preferences (Holland & De Valk, 2013) and perceptions about the ideal family size (Mussino & Ortensi, 2018). Our results thus underscore the continuing role of norms and behaviors of countries of origin, transmitted and maintained through links to family and friends in countries of origin as well as parents and other co-ethnics in countries of residence (De Valk & Liefbroer 2007; Nauck 2001).

While we did find consistent evidence that family formation regimes in countries of origin remain important to some extent for all children of immigrants, there were some differences across ages at arrival in Norway. That is, a later SMAM in countries of origin decreased the likelihood of endogamous marriage significantly less for those who arrived in Norway at older ages compared to the native born and those arriving at younger ages. Furthermore, the marital age in countries of origin was a weaker predictor of cohabitation among childhood immigrants than the native-born children of immigrants. These findings are not fully consistent with the expectations of Hypothesis 5 claiming that the influence of family formation regimes in countries of origin is lower for the native-born children of immigrants and those who arrived at younger ages as compared to those immigrating at later ages. In their study of family formation timing preferences, Holland and De Valk (2013) did find evidence of such a gradient, with the influence of origin diminishing over time and generations. So, even if preferences change, the findings of the current paper imply that parents, family and social networks, and the wider norms of countries of origin, continue to play an important role in shaping partnership behaviors, even among the second generation. Nevertheless, the overall chances of marrying directly or partnering endogamously, which may be properly labelled “traditional” partnership behavior, was higher among those immigrating later in life compared to immigrants arriving as small children and the second generation.

We further expected that the partnership behavior of women would be more influenced by the family formation regimes in countries of origin than that of men (Hypothesis 6). Results from interaction models confirmed that the overall positive association between a later SMAM in countries

of origin and exogamous cohabitation was stronger among women than men. A later SMAM, however, was more positively associated with endogamous marriage among women compared to men. Although the direction of this latter interaction effect was not as expected, it does suggest that women overall are more likely to marry endogamously than men, regardless of marriage behavior in countries of origin. This could be due to gendered transmission of family norms favoring endogamy and marriage, perhaps stemming from traditional value systems and religious practices. As the data used here do not contain information on attitudes or values, we must leave exploration of these issues to future research.

Our measures of partnership behavior in countries of origin were restricted to the SMAM and the share married by age 29. These measures capture the centrality of marriage as well as marital timing patterns in countries of origin. Nonetheless, as there are currently no available global data on the prevalence and timing of unmarried cohabitation, we were not able to assess the importance of cohabitation behavior in countries of origin. In other words, we do not know if a pattern of delayed marriage in sending countries is offset by a corresponding increase in cohabitation or rather increasing rates of singles, as is the situation in some East-Asian countries (Esteve et al., 2020). And, delayed first marriage or a low share married are not necessarily synonymous with a high level of acceptance of cohabitation. Future research should employ data on cohabitation in sending countries and assess whether the prevalence and the acceptance of this union type is related to partnership behavior in destination countries.

The cohabitation data used here were obtained from housing registers, not self-reported (retrospective) survey data as commonly used. Including majority individuals born 1985 to 2001 in additional analyses confirmed that 93% chose cohabitation as first union (not shown). This is comparable to results from prior research using survey data on the Norwegian non-immigrant population (e.g., Wiik, 2009). We thus feel safe to say that we capture most cohabiting unions using these register data. Nonetheless, those cohabiting without reporting address change (e.g., students) were not counted as cohabiting in the data used here, neither were same-sex unions or cohabiting unions entered at the beginning of one year that were dissolved later that year.

Taken together, the findings of the current paper provided important insights into the unique influences of origin and residential context on union and partner choice among the growing share of young adults with a migrant background in Norway and, more broadly, in Europe. Because these family behaviors are central to social distance between groups and they play an important role in economic progression and cultural integration, policy makers should more closely consider how the blending of cultural experiences has implications for the identities and well-being of young adults within increasingly diverse societies.

## Notes

1. Although the data used here contain no information on ethnicity, only (parents') country of birth, the term "co-ethnic" is used synonymously with "co-national" denoting an individual originating from the same country.
2. To ease interpretation of results, we chose not to separate between exogamous unions with a majority partner and those involving an immigrant partner from a different country of origin. This decision was further backed up by the fact that 69% of those cohabiting exogamously did so with a majority partner, whereas 66% of exogamous marriages involved a migrant-background partner. Only 960 marriages (34%) involved a majority partner (see Appendix Table A2).
3. On January 1, 2018, the number of counties was reduced from 19 to 18 when the counties Sør-Trøndelag and Nord-Trøndelag were collapsed. We use this 2018 standard classification of counties here (Statistics Norway, 2020).
4. The relatively low share of secondary and tertiary educated individuals in this sample was largely due to high shares of missing education among immigrants arriving at ages 13 to 17. Eighteen per cent of these teen migrants had missing information on education, compared to 4% of the second generation and those arriving prior to age six. Three per cent of those arriving at primary school age had missing information on education. Among those with valid information on education, the shares of primary educated individuals were also considerably lower among those with longer residence in Norway than among more recently arriving immigrants. Notably, 43% of these second-generation individuals were primary educated compared to 67% of those arriving as teens.

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## Appendix

**Table A1.** 50 largest countries of origin (i.e., own (1.5 generation) or parents' (second generation) country of birth) with their singulate mean ages at marriage (SMAM) and shares not married ages 25 to 29. Migrant-background men and women born 1985 to 2001.

Men					Women				
Country	<i>N</i>	% SMAM <sup>a</sup>	% Not married <sup>b</sup>		Country	<i>N</i>	% SMAM <sup>a</sup>	% Not married <sup>b</sup>	
Afghanistan	6,071	9.04	25.00	20.00	Pakistan	4,834	8.32	23.00	17.51
Pakistan	5,178	7.71	26.00	39.00	Somalia	4,476	7.70	20.59	7.41
Somalia	5,056	7.53	27.00	41.00	Iraq	3,566	6.15	23.03	22.31
Iraq	4,253	6.33	26.62	41.66	Poland	3,035	5.52	26.86	37.43
Poland	3,346	4.98	28.93	58.11	Vietnam	2,616	4.50	22.23	15.83
Vietnam	2,800	4.17	26.18	37.17	Thailand	2,053	3.53	23.25	27.42
Turkey	2,201	3.28	27.47	44.93	Turkey	2,040	3.51	23.27	20.39
Iran	2,109	3.14	26.73	39.19	Kosovo	1,924	3.31	25.00	28.00
Kosovo	2,076	3.09	28.00	53.00	Sri Lanka	1,881	3.24	23.27	24.77
Sri Lanka	2,070	3.08	27.16	48.32	Iran	1,843	3.17	24.00	25.51
Eritrea	1,875	2.79	25.00	30.00	Bosnia-H.	1,763	3.03	25.56	31.37
Russia	1,828	2.72	27.00	40.00	Russia	1,683	2.90	24.00	26.00
Bosnia-H.	1,778	2.65	30.58	71.48	Afghanistan	1,638	2.82	21.71	9.71
Thailand	1,696	2.53	28.82	53.21	Germany	1,402	2.41	31.63	71.65
Germany	1,525	2.27	33.84	84.86	Eritrea	1,302	2.24	20.07	8.22
Syria	1,385	2.06	29.00	61.00	Philippines	1,153	1.98	23.14	26.20
Lithuania	1,197	1.78	33.75	90.65	Lithuania	1,115	1.92	31.54	78.50
Philippines	1,166	1.74	26.85	44.69	Morocco	1,042	1.79	26.00	40.23
Morocco	1,113	1.66	31.00	69.78	Sweden	1,029	1.77	31.18	76.16
Sweden	1,088	1.62	33.25	86.53	India	951	1.64	20.78	6.78
India	1,056	1.57	25.00	28.51	Syria	877	1.51	25.00	37.86
Chile	936	1.39	29.00	60.07	Chile	873	1.50	26.62	49.70
Ethiopia	807	1.20	25.86	32.81	Ethiopia	756	1.30	21.00	10.68
Iceland	753	1.12	30.00	67.13	Iceland	756	1.30	28.00	51.21
Denmark	705	1.05	33.46	86.95	China	696	1.20	24.18	20.62
China	673	1.00	26.16	35.08	Denmark	675	1.16	31.55	76.47
Netherlands	610	0.91	33.96	85.29	Netherlands	611	1.05	31.86	73.53
Palestine	518	0.77	27.96	47.65	Congo	415	0.71	20.77	9.88
UK	445	0.66	29.25	57.87	Croatia	393	0.68	26.65	43.52
Macedonia	444	0.66	27.00	38.00	Macedonia	391	0.67	24.73	24.83
Croatia	420	0.63	30.00	66.31	UK	385	0.66	27.42	44.88
Congo	413	0.62	25.71	29.99	Palestine	353	0.61	23.00	20.28
Lebanon	381	0.57	31.98	79.83	Lebanon	339	0.58	27.97	51.90
Myanmar	370	0.55	26.07	39.96	US	333	0.57	26.64	42.23
Serbia	367	0.55	30.00	67.58	Myanmar	326	0.56	24.11	32.85

Latvia	352	0.52	32.87	76.15	Serbia	323	0.56	26.84	40.99
Romania	339	0.50	29.90	64.37	Brazil	322	0.55	23.66	33.21
US	309	0.46	28.06	55.74	Latvia	303	0.52	29.97	61.39
Brazil	297	0.44	26.91	46.13	Romania	294	0.51	26.62	39.73
Sudan	271	0.40	29.26	58.37	Ghana	289	0.50	24.41	24.39
Ukraine	266	0.40	26.00	32.00	Finland	272	0.47	30.07	69.96
Ghana	260	0.39	27.91	48.98	Ukraine	263	0.45	23.01	18.36
Finland	238	0.35	32.00	81.27	Bulgaria	235	0.40	31.07	65.73
Kenya	227	0.34	26.19	35.76	Sudan	232	0.40	21.85	17.78
Bulgaria	221	0.33	34.46	83.43	Italy	225	0.39	31.54	73.80
Gambia	183	0.27	30.28	67.39	Kenya	222	0.38	21.89	14.30
Italy	171	0.25	34.67	88.26	Gambia	179	0.31	21.68	12.68
Estonia	170	0.25	34.58	81.74	Estonia	171	0.29	32.39	68.84
France	162	0.24	33.96	84.78	Liberia	168	0.29	22.98	21.11
Saudi Arab.	162	0.24	27.99	49.78	France	164	0.28	31.62	73.10
Other	4,807	7.16			Other	4,922	8.47		
<i>N</i>	67,144	100.0			<i>N</i>	58,109	100.0		

<sup>a</sup> SMAM = Singulate mean age at marriage in country of origin when individuals were 18 years old. <sup>b</sup> Share of population in country of origin aged 25-29 who were unmarried when individuals were 18 years old.

**Table A2.** Partners' migrant-background by union types. First unions formed 2005-2019 by migrant-background individuals born 1985-2001 ( $N=33,026$ )

Partner's background	Cohabitation		Marriage	
	Endogamous %	Exogamous %	Endogamous %	Exogamous %
Majority	-	68.93	-	33.57
Immigrant	87.75	27.32	77.89	58.39
Second generation	12.25	3.75	22.11	8.04
<i>N</i>	5,403	17,246	7,517	2,860
	<b>Women</b>			
Majority	-	69.07	-	37.38
Immigrant	90.20	27.31	78.86	55.42
Second generation	9.80	3.62	21.14	7.20
<i>N</i>	3,060	8,946	4,088	1,624
	<b>Men</b>			
Majority	-	68.78	-	28.56
Immigrant	84.55	27.34	76.73	62.30
Second generation	15.45	3.88	23.27	9.14
<i>N</i>	2,343	8,300	3,429	1,236

**Table A3.** Results from discrete-time multilevel multinomial logistic models of first union formation: a) Cohabitation, endogamous, b) cohabitation, exogamous, c) marriage, endogamous, or d) marriage, exogamous (continued to be unpartnered=base category). Migrant-background individuals born 1985-2001 who were either native-born or who immigrated prior to age 18 ( $N=125,253$ ).

	Model 1: SMAM						Model 2: Alternative specification, % not married 25 to 29									
	Cohabitation, endogamous		Cohabitation, endogamous		Marriage, exogamous		Cohabitation, endogamous		Cohabitation, endogamous		Marriage, exogamous					
	$\beta$	(SE)	$\beta$	(SE)	$\beta$	(SE)	$\beta$	(SE)	$\beta$	(SE)	$\beta$	(SE)				
Fixed effects																
<i>Individual level</i>																
Migrant generation																
Norwegian-born	<i>Ref.</i>															
Immigrated, 0-5 years	0.34*	(0.06)	0.14*	(0.03)	0.02	(0.04)	0.06	(0.06)	0.34*	(0.06)	0.15*	(0.03)	0.02	(0.04)	0.06	(0.06)
Immigrated, 6-12 years	0.66*	(0.05)	0.15*	(0.02)	0.25*	(0.04)	0.08	(0.06)	0.67*	(0.05)	0.15*	(0.02)	0.25*	(0.04)	0.08	(0.06)
Immigrated 13-17 yrs.	1.18*	(0.05)	-0.01	(0.03)	0.67*	(0.04)	0.17*	(0.06)	1.18*	(0.05)	-0.01	(0.03)	0.67*	(0.04)	0.17*	(0.06)
Woman (1=yes)	0.85*	(0.06)	0.45*	(0.03)	0.67*	(0.05)	0.79*	(0.06)	0.82*	(0.05)	0.44*	(0.02)	0.61*	(0.05)	0.76*	(0.06)
Education, $t-1$																
Primary	<i>Ref.</i>															
Secondary	-0.12*	(0.04)	0.01	(0.02)	0.18*	(0.03)	0.12*	(0.05)	-0.12*	(0.04)	0.01	(0.02)	0.17*	(0.03)	0.12*	(0.05)
Tertiary	-0.09	(0.05)	0.15*	(0.03)	0.18*	(0.04)	0.30*	(0.06)	-0.09	(0.05)	0.15*	(0.03)	0.18*	(0.04)	0.30*	(0.06)
Missing	0.03	(0.05)	-0.36*	(0.04)	-0.16*	(0.06)	-0.37*	(0.11)	0.03	(0.05)	-0.36*	(0.04)	-0.17*	(0.06)	-0.36*	(0.11)
Student, $t-1$ (1=yes)	-0.20*	(0.03)	-0.04*	(0.02)	-0.63*	(0.03)	-0.54*	(0.05)	-0.20*	(0.03)	-0.04*	(0.02)	-0.63*	(0.03)	-0.32*	(0.05)
Income, $t-1$	0.02*	(0.01)	0.02*	(0.01)	0.03*	(0.01)	0.02*	(0.01)	0.02*	(0.01)	0.02*	(0.01)	0.03*	(0.01)	0.02*	(0.01)
Calendar year	-0.04*	(0.01)	0.01*	(0.01)	-0.12*	(0.01)	-0.08*	(0.01)	-0.04*	(0.01)	0.01*	(0.01)	-0.12*	(0.01)	-0.08*	(0.01)
Age	0.95*	(0.05)	1.01*	(0.03)	1.44*	(0.05)	1.27*	(0.07)	1.03*	(0.05)	1.04*	(0.05)	1.51*	(0.03)	1.29*	(0.07)
Age <sup>2</sup>	-0.02*	(0.01)	-0.02*	(0.01)	-0.03*	(0.01)	-0.02*	(0.01)	-0.02*	(0.01)	-0.02*	(0.01)	-0.03*	(0.01)	-0.02*	(0.01)
<i>County of residence level</i>																
Co-ethnics/1,000 <sup>a</sup>	0.03*	(0.01)	-0.02*	(0.01)	0.01	(0.01)	-0.02*	(0.01)	0.03*	(0.01)	-0.02*	(0.01)	0.01	(0.01)	-0.02*	(0.01)

*Country of origin level*

SMAM <sup>b</sup>	0.04* (0.01)	0.02* (0.01)	-0.02 (0.01)	0.02 (0.01)	0.05* (0.01)	0.03* (0.01)	-0.06* (0.01)	0.01 (0.01)
% not married <sup>c</sup>								
Random effects								
Country of origin	0.75 (0.14)	0.13 (0.02)	1.16 (0.20)	0.28 (0.06)	0.74 (0.14)	0.13 (0.02)	1.11 (0.19)	0.29 (0.06)
Country (county)	0.07 (0.01)	0.03 (0.01)	0.08 (0.02)	0.11 (0.03)	0.07 (0.01)	0.03 (0.01)	0.08 (0.02)	0.11 (0.03)
Constant	-20.3* (0.73)	-17.5* (0.40)	-25.8* (0.73)	-24.0* (1.00)	-19.5* (0.64)	-17.1* (0.36)	-25.9* (0.62)	-23.5* (0.93)
N Events	5,403	17,246	7,517	2,860	5,403	17,246	7,517	2,860
N Person-years		749,923				749,923		
N Countries		187				187		
N Counties		18				18		
Pseudo-AIC		20460	199			20461	135	
Pseudo-BIC		20460	225			20461	161	

<sup>a</sup> Number of individuals originating from the same country per 1,000 inhabitants in county of residence, year  $t-1$  <sup>b</sup> SMAM=Singulate mean age at marriage in country of origin when individuals were 18 years old. <sup>c</sup> Share of population in country of origin aged 25-29 who were unmarried when individuals were 18 years old.

\*  $p < .05$ .

**Table A4.** Results from discrete-time multilevel multinomial logistic models of first union formation: a) Cohabitation, endogamous, b) cohabitation, exogamous, c) marriage, endogamous, or d) marriage, exogamous (continued to be unpartnered=base category). Separate models for migrant-back-ground men ( $N=67,144$ ) and women ( $N=58,109$ ) born 1985-2001 who were either native-born or who immigrated prior to age 18.

	Main models, with SMAM								Alternative specifications, with % not married 25 to 29							
	Men				Women				Men				Women			
	a)	b)	c)	d)	a)	b)	c)	d)	a)	b)	c)	d)	a)	b)	c)	d)
Fixed effects																
<i>Individual level</i>																
Migrant generation																
Norwegian-born	<i>Ref.</i>				<i>Ref.</i>				<i>Ref.</i>				<i>Ref.</i>			
Immig, 0-5yrs	0.28* (0.09)	0.07* (0.04)	-0.10 (0.06)	0.04 (0.09)	0.38* (0.07)	0.21* (0.04)	0.09* (0.05)	0.09 (0.08)	0.28* (0.09)	0.07* (0.04)	-0.11 (0.06)	0.03 (0.09)	0.38* (0.07)	0.21* (0.04)	0.09* (0.05)	0.09 (0.08)
Immig, 6-12 yrs	0.64* (0.08)	0.12* (0.04)	0.30* (0.06)	-0.01 (0.09)	0.70* (0.07)	0.19* (0.03)	0.23* (0.05)	0.15* (0.08)	0.63* (0.08)	0.11* (0.04)	0.30* (0.06)	0.01 (0.09)	0.70* (0.07)	0.19* (0.03)	0.23* (0.05)	0.15* (0.08)
Imm, 13-17 yrs	1.24* (0.08)	-0.06 (0.04)	0.75* (0.06)	0.13 (0.10)	1.18* (0.07)	0.02 (0.04)	0.64* (0.06)	0.18* (0.08)	1.23* (0.08)	-0.06 (0.04)	0.75* (0.06)	0.13 (0.10)	1.18* (0.07)	0.02 (0.04)	0.64* (0.06)	0.18* (0.08)
Education, $t-1$																
Primary	<i>Ref.</i>				<i>Ref.</i>				<i>Ref.</i>				<i>Ref.</i>			
Secondary	-0.03 (0.05)	0.07* (0.03)	0.12* (0.04)	0.19* (0.07)	-0.19* (0.05)	-0.03 (0.03)	0.20* (0.04)	0.08 (0.07)	-0.03 (0.05)	0.07* (0.03)	0.12* (0.04)	0.19* (0.07)	-0.19* (0.05)	-0.03 (0.03)	0.20* (0.04)	0.08 (0.07)
Tertiary	0.03 (0.07)	0.23* (0.04)	0.19* (0.05)	0.34* (0.08)	-0.12 (0.06)	0.12* (0.04)	0.25* (0.05)	0.32* (0.08)	0.03 (0.07)	0.23* (0.04)	0.19* (0.05)	0.35* (0.08)	-0.12 (0.06)	0.12* (0.04)	0.24* (0.05)	0.32* (0.08)
Missing	0.05 (0.08)	-0.15* (0.05)	-0.14 (0.09)	-0.47* (0.17)	0.02 (0.07)	-0.59* (0.06)	-0.13 (0.08)	-0.30* (0.14)	0.06 (0.08)	-0.15* (0.05)	-0.14 (0.09)	-0.46* (0.17)	0.02 (0.07)	-0.59* (0.06)	-0.12 (0.08)	-0.30* (0.14)
Student, $t-1$	-0.10* (0.05)	-0.05 (0.03)	-0.54* (0.05)	-0.31* (0.08)	-0.26* (0.04)	-0.03 (0.03)	-0.71* (0.04)	-0.34* (0.06)	-0.10* (0.05)	-0.05 (0.03)	-0.54* (0.05)	-0.31* (0.08)	-0.26* (0.04)	-0.03 (0.03)	-0.71* (0.04)	-0.34* (0.06)
Income, $t-1$	0.02* (0.01)	0.01* (0.01)	0.02* (0.01)	0.02* (0.01)	0.03* (0.01)	0.02* (0.01)	0.03* (0.01)	0.03* (0.01)	0.02* (0.01)	0.01* (0.01)	0.02* (0.01)	0.02* (0.01)	0.03* (0.01)	0.02* (0.01)	0.03* (0.01)	0.03* (0.01)

Calendar year	-0.04* (0.01)	0.02* (0.01)	-0.14* (0.01)	-0.08* (0.01)	-0.08* (0.01)	0.01* (0.01)	-0.11* (0.01)	-0.03* (0.01)	-0.03* (0.01)	0.01* (0.01)	-0.11* (0.01)	-0.08* (0.01)
Age	1.18* (0.08)	1.08* (0.04)	2.01* (0.08)	1.57* (0.12)	1.19* (0.10)	1.01* (0.04)	1.41* (0.07)	0.94* (0.07)	0.94* (0.07)	1.01* (0.04)	1.41* (0.07)	1.19* (0.10)
Age <sup>2</sup>	-0.02* (0.01)	-0.02* (0.01)	-0.03* (0.01)	-0.03* (0.01)	-0.02* (0.01)	-0.02* (0.01)	-0.03* (0.01)	-0.02* (0.01)	-0.02* (0.01)	-0.02* (0.01)	-0.03* (0.01)	-0.02* (0.01)
<i>County of residence level</i>												
Co-ethnics/1000 <sup>a</sup>	0.03* (0.01)	-0.02* (0.01)	0.01 (0.01)	-0.02* (0.01)	-0.03* (0.01)	-0.02* (0.01)	0.01 (0.01)	0.03* (0.01)	0.03* (0.01)	-0.02* (0.01)	0.01 (0.01)	-0.03* (0.01)
<i>Country of origin level</i>												
SMAM <sup>b</sup>	0.01 (0.02)	0.00 (0.01)	-0.01 (0.02)	0.05* (0.02)	0.03 (0.02)	0.01 (0.01)	-0.02 (0.03)	0.03 (0.02)	0.03 (0.02)	0.01 (0.01)	-0.02 (0.03)	0.03 (0.02)
% not married <sup>c</sup>								0.04 (0.03)	0.01 (0.03)	0.03 (0.02)	-0.07 (0.04)	0.03 (0.03)
Random effects												
Country of origin	0.63 (0.15)	0.12 (0.02)	1.01 (0.21)	0.27 (0.07)	0.36 (0.08)	0.21 (0.03)	1.22 (0.23)	0.55 (0.11)	0.54 (0.11)	0.21 (0.03)	1.16 (0.22)	0.37 (0.08)
Country (county)	0.06 (0.02)	0.03 (0.01)	0.04 (0.01)	0.09 (0.04)	0.12 (0.04)	0.05 (0.01)	0.09 (0.02)	0.07 (0.02)	0.07 (0.02)	0.05 (0.01)	0.09 (0.02)	0.12 (0.04)
Constant	-22.8 (1.16)	-18.0 (0.58)	-34.1 (1.23)	-29.6 (1.65)	-22.0 (1.28)	-16.7 (0.57)	-23.4 (1.06)	-17.4 (1.01)	-18.7 (0.87)	-16.8 (0.51)	-23.9 (0.84)	-21.8 (1.19)
N Events	2,343	8,300	3,429	1,236	1,624	8,946	4,088	3,060	3,060	8,946	4,088	1,624
N Person-years		416,447				333,476		416,447		333,476		
N Countries		176				184		176		184		
N Counties		18				18		18		18		
Pseudo-AIC		11947	437			8738	754	11947		8740	366	
Pseudo-BIC		11947	462			8738	780	11947		8740	392	

<sup>a</sup> Number of individuals originating from the same country per 1,000 inhabitants in county of residence, year  $t-1$  <sup>b</sup> SMAM=Singulate mean age at marriage in country of origin when individuals were 18 years old. <sup>c</sup> Share of population in country of origin aged 25-29 who were unmarried when individuals were 18 years old. \*  $p < .05$ .

**Table A5.** Results from three discrete-time multilevel multinomial logistic interaction models of first union formation (continued to be unpartnered=base category). Migrant-background individuals born 1985-2001 who were either native-born or who immigrated prior to age 18 ( $N=125,253$ ).

	Cohabitation, endogamous		Cohabitation, exogamous		Marriage, endogamous		Marriage, exogamous	
	$\beta$	(SE)	$\beta$	(SE)	$\beta$	(SE)	$\beta$	(SE)
<b>Model 1</b>								
% unmarried <sup>a</sup> , main effect	0.055*	(0.023)	0.036*	(0.011)	-0.111*	(0.023)	0.029	(0.024)
% unmarried $\times$ age arrival <sup>b</sup>	-0.000	(0.001)	-0.001	(0.000)	0.006*	(0.001)	-0.001	(0.001)
<b>Model 2</b>								
% unmarried, main effect	0.076*	(0.029)	0.045*	(0.012)	-0.106*	(0.026)	0.024	(0.027)
% unmarried $\times$ 0-5 y <sup>c</sup>	0.016	(0.030)	-0.029*	(0.011)	-0.007	(0.025)	0.009	(0.003)
% unmarried $\times$ 6-12 y	-0.058*	(0.026)	-0.010	(0.010)	0.045*	(0.022)	-0.012	(0.026)
% unmarried $\times$ 13-17 y	-0.004	(0.026)	-0.031*	(0.011)	0.091*	(0.022)	-0.007	(0.027)
<b>Model 3</b>								
% unmarried, main effect	0.050*	(0.020)	0.001	(0.010)	-0.067*	(0.019)	-0.007	(0.023)
% unmarried $\times$ Gender <sup>d</sup>	0.003	(0.018)	0.046*	(0.008)	0.061*	(0.021)	0.051*	(0.020)
<i>N</i> Events	5,403		17,246		7,517		2,860	
<i>N</i> Person-years	749,923							

*Note:* Models controlled for variables included in interaction terms as well as co-ethnics/1000 year  $t-1$ , education level year  $t-1$ , enrolled in school year  $t-1$ , annual income year  $t-1$ , calendar year, gender, age and age squared. Models include random effects for country of origin as well as country of origin within county of residence year  $t-1$ .

<sup>a</sup> Share of population aged 25 to 29 in country of origin who were not married. <sup>b</sup> Native born by immigrant parents = 0 years. <sup>c</sup> Native born = reference. <sup>d</sup> 0 = men, 1 = women.

\*  $p < .05$ .