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Who Remains Single? Educational Gradients in Long-Term Singlehood Across Ethnic Groups

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ABSTRACT

Objective: To compare the prevalence of long-term singlehood and its educational gradient .

Background: Educational gradients in singlehood vary with countries' prevalent gender roles, and European societies increasingly include ethnic minorities originating from countries with more traditional gender roles. This study investigates whether the prevalence of singlehood and its educational gradient differ between ethnic majority and minority groups and whether opportunity structures are shaping any such differences.

Method: Using full-population register data from the Netherlands, this study examines educational gradients in the risk of entering one's first co-residential union (i.e., cohabitation or marriage) between ages 18 and 45, while also exploring differences and temporal shifts in opportunity structures. A rich description including non-parametric Kaplan–Meier curves is provided for women and men of Dutch, Turkish, and Moroccan origin who were born in the Netherlands or abroad between 1977 and 1983.

Results: Long-term singlehood is more common among ethnic minorities. University education is associated with lower singlehood rates among men of all groups and Dutch-origin women, but with higher singlehood rates among women of Turkish and Moroccan origin. This reversed educational gradient can partially be attributed to the limited availability of coethnic university-educated male partners.

Conclusion: The interplay of individual preferences, endogamy norms, and the structural availability of educational and ethnic ingroup partners affects who remains single in ethnically diverse societies.

1 | Introduction

Spells of singlehood in early adulthood allow individuals to make greater investments in platonic relations, education, and career; and acceptance of singlehood has generally risen (Kislev 2019; Klineberg 2013; van den Berg and Verbakel 2022). At the same time, couplehood remains the norm in most societies; singles are often confronted with expectations to eventually find a partner, and the majority of them would prefer to be in a relationship (Bergström et al. 2019; Poortman and Liefbroer 2010;

Strijbosch 2015). Notwithstanding heterogeneity in individuals' lived experiences of life-long singlehood (Timonen and Doyle 2014), remaining single for an extended time is also associated with the experience of childlessness (Jalovaara and Fasang 2017), loneliness (Huxhold et al. 2022), higher mortality (Kulu et al. 2024), a lack of social support, and lower levels of well-being (Girme et al. 2022). This has led to growing scientific attention to study social gradients in singlehood, paying particular attention to the role of education.

Educational gradients in the likelihood of experiencing longer spells of singlehood differ both in size and direction across genders and societies (Bellani et al. 2017; Kalmijn 2013): In countries where more egalitarian gender values are prevalent, the likelihood of remaining single (vis-à-vis entering marriage or cohabitation) until mid-life is higher among lower-educated women and men. In these contexts, higher education is generally valued as a trait in potential partners and thus decreases individuals' chances of remaining single (Schwartz 2013). In countries with stronger adherence to traditional gender roles featuring a male breadwinner and a female homemaker, entering a partnership is often an economic necessity for women without higher levels of education. Here, education is thus associated with increased chances of staying single among women, whereas the reverse is true among men (Oppenheimer 1997).

In many Western European societies, the largest ethnic minority groups have origins in Turkey and Morocco, where more traditional gender roles than in most European countries are prevalent and from where immigration started with the guest worker agreements in the 1960s. Despite general improvements in their socio-economic integration (Drouhot and Nee 2019), social boundaries between these groups and the native majorities have remained salient, as indicated by persisting differences in terms of religion, attitudes toward gender equality, family values, and female labor force participation (Arends-Tóth and Van de Vijver 2009; Drouhot and Nee 2019; Kalmijn and Kraaykamp 2018; Karim 2024; Khoudja and Fleischmann 2017; Röder and Mühlau 2014; Soehl 2017). These boundaries are reflected in low rates of partnership formation between the Turkish and Moroccan groups on the one hand and majority groups across Europe on the other hand: For example, less than 20% among union-forming individuals of Turkish or Moroccan origin partner with a majority member in the Netherlands and in Germany (Alba and Foner 2015). This begs the question of whether the prevalence of singlehood and its educational gradient differ between ethnic majority and minority members, and which social mechanisms are driving any such differences.

Empirical evidence on ethnic differences in the prevalence of singlehood and its educational gradient in Europe has remained scarce, despite two related bodies of literature: one focusing on singlehood among majority members (Bellani et al. 2017; Dykstra and Poortman 2010; Kalmijn 2013; Timonen and Doyle 2014; Wiik and Dommermuth 2014) and another examining partnership formation patterns of immigrants and their descendants (Carol 2016; Dribe and Lundh 2011; Erdogan and Abbasoğlu Özgören 2022; Huschek et al. 2010; Kleinepier and de Valk 2016; Milewski and Hamel 2010; Qvist and Qvist 2023; van Tubergen and Maas 2007; Wachter and de Valk 2022a). The former shows that the prevalence of singlehood varies between educational groups and across countries but has paid no attention to singlehood among ethnic minority members. The latter consistently shows that immigrants and their descendants with origins in Turkey and Morocco form their first unions at younger ages than ethnic majority members and predominantly partner within their own ethnic groups. However, these studies typically follow individuals only up to their early 30s or focus exclusively on those who eventually form partnerships, thus ignoring patterns of long-term singlehood.

Against this backdrop, we examine ethnic differences in educational gradients in long-term singlehood. We define long-term singlehood as not having been in a co-residential union until entering the 40s (i.e., age 40–45). We draw on arguments in the intermarriage literature about the role of preferences, third-party influences, and opportunity structures for partner choice (Kalmijn 1998) and apply them to long-term singlehood as an important alternative outcome of the search for a partner. In particular, we argue that the interplay of these forces makes entry into partnership less attractive for university-educated women of Turkish- and Moroccan origin and that they therefore are more likely to remain single than their counterparts without a university degree. Since too few university-educated ethnic ingroup men are available as partners, many minority women would have to opt for a partner from the ethnic majority or a coethnic partner without a university degree—choices that may conflict with endogamy preferences and norms as well as with their gender roles and occupational aspirations. For men, by contrast, university education should be linked to lower risks of remaining single across all ethnic groups because endogamy norms are weaker, education-level-specific sex ratios work in favor of university-educated men, and their partner choice is less consequential for their future occupational attainment and career progression as most partners would expect them to pursue paid work.

To test these expectations, we utilize 29 years of full-population register data from the Netherlands (https://www.cbs.nl/en-gb/our-services/customised-services-microdata/microdata-conducting-your-own-research/microdata-catalogue, 1995–2023), where individuals of Turkish and Moroccan origin are the largest immigrant groups, jointly accounting for one fifth of the population with an immigrant background (Statistics Netherlands 2023). These data allow us to follow the partnership trajectories of individuals of Dutch, Turkish, and Moroccan origin born between 1977 and 1983 from age 18 until their 40s. We thus move beyond existing studies examining singlehood during shorter periods, such as post-leaving home (Van Den Berg 2023) or mid-life (Kalmijn 2013), that also do not differentiate between ethnic groups. Moreover, the register's full-population coverage allows us to link patterns of long-term singlehood to the availability of educational and ethnic ingroup partners across different stages of the life course. Thus, rather than focusing on individual characteristics alone, we also consider the changing structural opportunities for finding a partner of a different sex to explain singlehood. Earlier studies on partner choice only consider the opportunity structure directly at the time of union formation (e.g., Carol 2016; Qvist and Qvist 2023), and research on singlehood seldom considers this factor at all (but see Lichter et al. 2020 for the US). Taken together, the current study illuminates how the interplay of social boundaries and structural

features of the partnership market translates into social gradients in singlehood. It thereby advances the literature on partnership formation in ethnically diverse societies by drawing attention to a group often overlooked in earlier research: long-term singles.

2 | Theoretical Background

In this section, we theorize about how ethnic differences in educational gradients in singlehood come about, paying particular attention to the factors that might influence whether individuals prioritize partnership formation over remaining single. Both options are associated with distinct advantages and disadvantages that (yet) unpartnered individuals may weigh against one another. Potential partners' characteristics and their implications for one's own future likely play an important role in this deliberation process.

While some individuals prefer to remain single in the long term—even if they could find a highly compatible partner—because singlehood offers greater flexibility, autonomy, and opportunities to focus on their professional career (Kislev 2019; Klineberg 2013; van den Berg and Verbakel 2022), the majority of singles would rather be in a relationship than remain single. For example, Poortman and Liefbroer (2010) show that among 18–45-year-old singles in the Netherlands, only 21% hold explicitly positive attitudes toward singlehood, and 85% favor a relationship over their current state of singlehood, suggesting that voluntary long-term singlehood is relatively uncommon. Bergström et al. (2019) conclude that singles in their early 30s are least satisfied with singlehood and more likely to feel excluded than singles in later stages of the life course, during which singlehood is more common. Thus, as individuals progress through early adulthood and experience the remaining options on the partnership market, long-term singlehood may turn out to be more attractive than entering a union. Whether potential partners are viewed as attractive candidates for partnership formation depends on individuals' personal preferences and on the norms about partnership formation prevalent in their social circles, which differ across ethnic groups (Kalmijn 1998; Tolsma et al. 2007).

2.1 | Preferences and Norms About Ethnic Ingroup Partnering

In Europe and in the Netherlands in particular, most individuals among the ethnic majority and the minority groups of Turkish and Moroccan origin prefer to partner within their own group. This is evident from studies analyzing attitudes about inter- and intraethnic partnership formation (Carol 2013; Carol and Teney 2015; Huijnk et al. 2010; Tolsma et al. 2007). For example, Dutch majority members' average scores on a 5-point scale measuring the extent to which ethnic intermarriage with individuals of Turkish or Moroccan origin would bother them (1 = not at all, 5 = a lot) commonly exceed the value 3—whether individuals at risk of partnership formation or their parents were asked (Hujink and Liefbroer 2012). While such estimates are likely downwardly biased due to social desirability, the unions that majority- and minority members actually formed partially reflect revealed preferences, too: Endogamous unions are much more common than would be expected under random mating (Huschek et al. 2012; Muttarak and Heath 2010). Among the Turkish second generation, for example, ethnic endogamy rates commonly exceed 70% in most Western European destination countries despite the abundant availability of outgroup partners (Alba and Foner 2015; Huschek et al. 2012). Individual preferences for ethnic endogamy and adherence to endogamy norms are particularly strong among minority members who are lower educated and religious. These preferences are also argued to closely tied to preferences for a partner who shares one's religion (Carol 2013).

On top of their own preferences, minority- and majority members' partner choice is also influenced by social norms (Kalmijn 1998). If negative attitudes toward intermarriage are common among young people's parents and peers, individuals looking for a partner might refrain from forming inter-ethnic unions even if they are personally willing to partner with an ethnic outgroup member. They anticipate that choosing a partner from an ethnic outgroup might provoke disapproval or even strong social sanctions among their network.

Importantly, among minority members of Turkish and Moroccan origin, endogamy norms are considerably stronger for women than for men. The Qur'an encourages both men and women to marry within the faith community, but it allows men to marry Jewish or Christian women. The husband's religion determines the continuation of the Muslim legacy of the family (Carol and Teney 2015; Clycq 2012). More than 80% of individuals with Turkish and Moroccan origins in the Netherlands identify as Muslim (see Table S7c). Whereas women are more strictly bound to ingroup partners, men may find their partners in another group and disappear as potential partners for ingroup women.

Together, preferences and norms for ingroup partnering imply that, on average, ethnically endogamous unions are viewed as more attractive options vis-à-vis exogamous unions. Compared to these options, ongoing singlehood might thus be preferable to entering an exogamous but not an endogamous union. Given that most individuals on the partnership market in the destination country belong to the majority group, preferences and norms for ethnic ingroup partners complicate the partner search significantly for minority groups, but less so for the majority.

2.2 | Own and Partner's Education, Human Capital Use, and the Household Bargain

The way in which individuals' own education is linked to singlehood depends on women's and men's roles in the labor market and the household. If rates of female labor force participation are low and adherence to traditional gender norms is strong, one may expect support for the *specialization hypothesis* associated with the "home economics" literature. This hypothesis posits that women exchange domestic labor for men's income and social status. Therefore, when women achieve higher levels of education and thus better income prospects, they become less dependent on a male breadwinner as their gains from the traditional household bargain decrease (Becker 1973; Sweeney 2002). Put differently, higher education offers more opportunities for

singlehood among women, as it allows them to focus more on their career and to afford more expensive accommodation on their own (Bellani et al. 2017). By contrast, if men attain higher education, their capacity to function as sole breadwinners increases, which, in turn, improves their prospects of finding a partner. In line with this notion, empirical evidence shows that higher education is associated with higher rates of singlehood among women in settings marked by comparatively traditional gender roles, such as in Turkey and Morocco (Gore and Carlson 2010; Žvan Elliott 2015).

Under more egalitarian gender roles, however, both women's and men's education contributes to the income and social status of the household, making higher education a desirable trait in male and female partners as suggested by the *human capital hypothesis* (Kalmijn 2013; Oppenheimer 1997). In that case, higher education would be negatively associated with singlehood among women and men. In line with this idea, comparative studies show that women's likelihood of entering a partnership increases most strongly with higher education in more egalitarian societies (Bellani et al. 2017; De Hauw et al. 2017; Kalmijn 2013). For example, a study about the comparatively gender-egalitarian Finnish context found that among both women and men, those with lower levels of education were disproportionately represented among never-partnered childless individuals (Jalovaara and Fasang 2017). Yet, even in egalitarian contexts, higher education can open up opportunities for singlehood among both women and men by enabling them to afford more individualized life courses (Bellani et al. 2017; Van Den Berg 2023).

Support for gender equality and women's labor force participation differs considerably between the Dutch majority group and the minority groups with origins in Turkey and Morocco. Although many women of Dutch origin still often do the majority of housework and often work part-time rather than full-time in the labor market, gender differences in these areas are considerably smaller compared to other countries in Europe and other regions of the world (Bellani et al. 2017; Grunow et al. 2018). By contrast, immigrants from Turkey and Morocco adhere to more traditional gender norms and maintain lower rates of female labor force participation, on average, and many studies also find differences between majority populations and the second generation (Arends-Tóth and Van de Vijver 2009; Kalmijn and Kraaykamp 2018; Khoudja and Fleischmann 2017; Röder and Mühlau 2014). Together with the observation that partnership formation primarily takes place within rather than between ethnic groups, one might thus expect empirical support for the human capital hypothesis among the majority group of Dutch origin, but for the specialization hypothesis among the minority groups of Turkish and Moroccan origin.

Given that the direction of the educational gradient in singlehood predicted by the specialization- and human capital hypotheses differs only among women, we further illustrate the situation of university-educated women belonging to the ethnic majority and minority. On average, university-educated women likely prefer a university-educated partner over a partner who has no university education. A university-educated partner will be able to contribute more to the prospective household income, and their tastes and values are likely more compatible (Schwartz 2013; Van Bavel 2021).

Gender norms and attitudes about the distribution of housework constitute a particularly important set of values in this regard from the perspective of higher-educated women, who typically aim to utilize their education to realize financial independence and self-fulfillment. These goals can usually only be achieved in a partnership if the partner is willing to take over at least some housework, and couples' division of housework and labor force participation is indeed strongly associated with partners' gender norms, and partners with higher levels of education tend to be more egalitarian partners—among both ethnic majority and minority members (Davis and Greenstein 2009; Diehl et al. 2009; Kalmijn and Kraaykamp 2018; Khoudja and Fleischmann 2017; Röder and Mühlau 2014).

University-educated women of Turkish or Moroccan origin likely have particularly strong incentives to find their partner among the university-educated, who usually hold more progressive gender norms. The underlying reason is that lower-educated men of Turkish and Moroccan origin hold gender norms that are more traditional than their majority counterparts. And indeed, minority women with a coethnic partner from a gender-traditionalist group often end up doing the majority of housework and follow disadvantaged earning trajectories. Their husbands, in turn, spend less time on domestic labor than ethnic majority men—particularly if they have not attained higher education and immigrated directly from their wife's parents' country of birth (Carriero 2021; Dale and Ahmed 2011; Frank and Hou 2015; Furtado and Song 2015; Kan and Laurie 2018).

In sum, from the perspective of university-educated women, a union with a university-educated partner is likely more attractive than a union with a partner without university education; and this applies particularly to those belonging to an ethnic minority group. Thus, if university-educated partners are hardly available, ongoing singlehood may still be more attractive than entering a union with a partner without a university degree.

2.3 | Opportunity Structure and the Problem of a Thin Partnership Market

Preferences, norms, and expectations about housework distribution suggest that university-educated women will likely prefer a university-educated co-ethnic partner. However, there are notoriously few partners with these characteristics available as women attain university degrees more commonly than men. This is not only the case among majority populations but particularly among ethnic minorities (De Hauw et al. 2017; OECD 2018; see also in Section 4: *Results*). Among Turkish- and Moroccan-orig minority groups, this mismatch is further intensified because available university-educated men may disappear faster from the partnership market than university-educated women, as the gendered endogamy norms grant them more freedom to partner outside their ethnic group (Carol 2016; Kalmijn 2012). Moreover, it is also less costly for minority men than for minority women to partner "down," that is, with someone without a university degree

and potentially more conservative gender norms, because a traditional division of housework still allows men—but not women—to pursue a professional career. This structural imbalance implies that among those university-educated minority women looking for a partner, not everyone can find a university-educated co-ethnic partner. Given that the attractiveness of union formation decreases under these circumstances (norm violation if partnering with an ethnic outgroup partner, influence of more traditional gender values if partnering down in education), staying single becomes relatively more attractive and should thus be more common than among ethnic minority women without a university degree (Neve and de Graaf 2022). Thus, if gender gaps in university attainment are larger and gender roles more conservative among Turkish and Moroccan origin groups vis-à-vis the Dutch majority group, one would expect that rates of long-term singlehood are higher among the former vis-à-vis the latter, because it is more difficult to find a partner with aligning gender roles for both women with a university degree and men without a university degree.

2.4 | Singlehood and Partnering Over the Life Course

Educational gradients in long-term singlehood are the product of differences in transitions from singlehood into partnership between educational groups during early adulthood. Those pursuing a university degree typically postpone entry into partnership—a pattern also found among the Turkish and Moroccan minorities (Blossfeld and Huinink 1991; Ní Bhrolcháin and Beaujouan 2013; Wachter and de Valk 2022a). During the initial phase of adulthood, the rate of women who had never entered a partnership should be higher among those following a university education vis-à-vis those who have not. This should be the case among the majority and the minority groups. During later life course stages, when most women following a university education have completed it, they become ready to transition from singlehood to their first partnership. If they encounter a partner with whom they can envisage forming a union, they will likely do so, given that most singles prefer being in a relationship over staying single (Poortman and Liefbroer 2010). Importantly, women from different ethnic groups likely differ in terms of their probability of coming across such a partner during this life stage. As discussed earlier, women of Turkish and Moroccan origin often prefer partners from within their own minority group, and the costs of partnering "down" in education are potentially higher for them, implying that for many, singlehood is more attractive than forming a union with a partner from an ethnic or educational outgroup. As a result, they remain single more often than those without a university education. By contrast, university-educated women of Dutch origin commonly find a partner during this life stage, resulting in their rates of long-term singlehood being lower than among their counterparts without a degree.

Table 1 provides a conceptual overview of the aforementioned arguments from the perspective of university-educated minority members. It summarizes the extent to which several partnering options and staying single are associated with different benefits, and also how available the respective option is.

2.5 | Hypotheses

From the aforementioned considerations, we derive the following hypotheses.

Hypothesis 1. *Turkish- and Moroccan-origin minority members are overall more likely to experience long-term singlehood than their ethnic majority counterparts.*

Hypothesis 2. *University education is associated with less long-term singlehood among men of all groups and women of Dutch origin, but with more long-term singlehood among Turkish- and Moroccan-origin women.*

Hypothesis 3. *University-educated men of all groups and university-educated women of Dutch origin transition from singlehood into their first union at lower rates during their early 20s but at higher rates during later stages compared to their counterparts without a university degree. Among women of Turkish and Moroccan origin, however, transition rates from singlehood to entry into partnership remain low even during later stages, resulting in a reversed educational gradient.*

Hypothesis 4. *The persisting reversed educational gradient among minority women can be partially accounted for by the shortage of available university-educated coethnic partners.*

3 | Methods

3.1 | Data and Measures

The Dutch population register includes information about every individual residing in the Netherlands. Throughout our analyses, we focus on the cohorts born between 1977 and 1983 for whom we observe the full partnership histories from the onset of adulthood until their 40s. Additionally, we restrict our analysis to individuals who were either born in the Netherlands or immigrated before reaching the age of 15 because education is not observed for those who completed their education before immigration. We distinguish between those of Dutch origin (i.e., both parents born in the Netherlands), Turkish origin (i.e., both parents born in Turkey), and Moroccan origin (i.e., both parents born in Morocco). We exclude individuals born in a foreign country different from their parents' country of birth or whose parents were born in two different countries; this pertains to relatively few individuals because of the strong ethnic endogamy among the aforementioned groups. Since different social dynamics may take place in the same-sex partnership market (Lundquist and Lin 2015), we further restrict our analytic sample to individuals who have never been in any same-sex union and only consider different-sex unions for our analyses. The final sample consists of 442,126 women and 444,738 men (see Tables S1a and S1b in the Supporting Information for an overview).

We measure singlehood as the absence of consensual unions, that is, marriages and cohabitations. An individual is considered to be long-term single if they have not been in a consensual union until entering their 40s (i.e., until their last available observation, which is between 40 and 45).

TABLE 1 | Likelihood of getting benefits from specific partnership choices and singlehood and the availability of these options from the perspective of university-educated women and men of Turkish and Moroccan Origin.

	Partner choice options				
Four possible benefits of decision	**Coethnic, university-educated**	**Coethnic, not university-educated**	**Ethnic majority, university-educated**	**Ethnic majority, not university-educated**	**Staying Single**
(1) Follow preference for cultural similarity with partner	Likely	Likely	Unlikely	Unlikely	Not applicable*
(2) Adhere to norms against ethnic and religious exogamy (most relevant for women)	Likely	Likely	Unlikely	Unlikely	Likely
(3) Follow preference for a university-educated partner	Likely	Unlikely	Likely	Unlikely	Not applicable*
(4) Possibility to utilize one's human capital (financial security and self-fulfillment, most relevant for women)	Likely	Unlikely (women) / Likely (men)	Likely	Somewhat Likely	Likely
(5) Opportunity structure: Likelihood of success	Restricted (women) / Relatively unrestricted (men) **	Relatively unrestricted **	Restricted as majority members often reject them as partners	Restricted as majority members often reject them as partners***	Unrestricted

Note: With this table, we do not suggest that all university-educated minority members with origins in Turkey or Morocco hold the preferences (hence the use of the terms "likely" and "unlikely"). Instead, this table aims to illustrate the structural nature of the dilemma that many young singles find themselves in. Note that coethnic partners may have grown up in the receiving society (second generation) or immigrated themselves (first generation, including transnational unions). *Benefits (1) and (3) are not applicable for singlehood because they are conditional on entering a partnership. **Because minority women complete university more often than minority men, sex ratios in the university-educated segment of the ethnic minority partnership market are skewed. The number of coethnic partners without a university degree exceeds that of those with a degree by far. ***At the same time, minority members with higher levels of education are often perceived as more attractive partners than their lower-educated counterparts (Elwert 2020).

Individuals count as living in a consensual union at a given point in time if they share an address with another person for at least 6 months and are further connected with that person through marriage, a common child, a joint house move, or a joint tax or benefit account. This information is updated retrospectively by Statistics Netherlands, that is, if two people live together at time point t and have a common child at $t+1$, they already count as living together at t. Our measure of long-term singlehood thus provides estimates that exceed those obtained by surveys that are typically based on retrospective questions about having ever been in a relationship for at least 3 months (e.g., Dykstra and Poortman 2010; Van Den Berg 2023): We do not observe couples that live "apart together," that are together for less than 6 months, or that cohabit without ever being connected in a way that would allow us to distinguish them from housemates. However, after all, durable living apart together relationships remain overall relatively uncommon (Liefbroer et al. 2015), and our measure of (long-term) singlehood reflects the absence of co-residential unions with a high level of commitment, which are usually the prerequisite for long-term partnerships and entry into family life. We also do not observe if people form a partnership abroad without moving back to the Netherlands. However, excluding individuals from the analyses who spent significant portions of their 20s and 30s abroad does not change the results. Yet, by studying singlehood using administrative rather than survey data, we circumvent problems of non-response and panel attrition, which are particularly common among migrant populations and individuals who change their address, for example, because they move in with a partner.

Education is measured as a dummy variable, distinguishing between individuals who, at any point during the observation window, have (1) and have not (0) attained a university-level degree, that is, a degree obtained at a university or university of applied sciences (WO/HBO, ISCED-2011 level 6). We measure individuals' level of education as time-constant because we are interested in educational gradients in singlehood, rather than the within-person effect of obtaining a degree on partnership formation. Moreover, individuals themselves and other people can typically observe whether an individual is on the trajectory to attain a certain degree (e.g., if they are currently enrolled at a university). The university degree threshold is used because it is precisely at this point of individuals' educational trajectories that they get exposed to more progressive (gender-) values, experience geographic mobility, and increase their expected earnings—aspects that may all be relevant to their prospective partnership formation (Campbell and Horowitz 2016; Forster et al. 2021). We refrain from distinguishing between more educational categories because it would considerably complicate the modeling of the availability of partners.

To measure the availability of partners in people's ethnic and educational ingroups, we assessed how many different-sex partners are available per individual of a given group(-combination). The relevant own-sex and different-sex individuals are all single, that is, not in a co-residential union, and at most 5 years younger or 5 years older than the focal individual. Similar age restrictions were used in other studies (Corti and Scherer 2021). We constructed two measures: (i) the ratio of different-sex individuals to own-sex individuals who belong to the same ethnic group, and (ii) the ratio of different-sex individuals to own-sex individuals who belong to the same ethnic and educational group. Importantly, these measures vary across the life course as own-sex and different-sex individuals may enter relationships and thus disappear from the partnership market at different rates. Moreover, they vary somewhat between individuals born in different years because they experience opportunity structures at different points in time. Whereas not all individuals exclusively seek partners within their own ethnic or educational group, there is clear evidence that preferences, norms, and meeting opportunities strongly encourage matches between individuals who share these characteristics (Alba and Foner 2015; Kalmijn 1998; Schwartz 2013). Our conclusions are maintained when considering own-sex and different-sex individuals who are up to 3 or 7 years younger or older than the focal individual. Across the birth cohorts we study, 81% (60%, 91%) of couples have an age difference of at most 5 (3, 7) years.

We treat the entire Netherlands as one partnership market rather than differentiating between different provinces because individuals frequently move and partner across provincial boundaries. With its population of approximately 18 million inhabitants distributed across 16,000 mile^2, the Netherlands can be compared to the largest US metropolitan statistical areas (e.g., New York, Los Angeles), which are commonly treated as local partnership markets (Choi and Tienda 2017; Gullickson 2021; Qian and Lichter 2018).

3.2 | Analytic Approach

To test our hypotheses about how educational gradients in singlehood come about, we first provide descriptive figures about the level of education as well as the rates of intraethnic union formation and long-term singlehood among ethnic majority and minority women and men with different levels of education. We further corroborate these findings by running logistic regressions that model the probability of remaining single long-term while controlling for individuals' year and place of birth (Tables S4a and S4b).

Second, we examine and visualize how the availability of coethnic partners with/without a university degree changes, as individuals get older. More specifically, we show how many single coethnic men (women) are available per single woman (man) at any given age (henceforth "opportunity structure"), averaged across all birth cohorts. This ratio of available men-to-women/women-to-men serves as a measure of the degree of competition for partners in different segments of the partnership markets.

Third, we present Kaplan–Meier curves to visualize the temporal dynamics of the transition out of singlehood into first partnership. Kaplan–Meier curves depict the survival rate S, which indicates the probability with which an individual does not experience an event (transition from singlehood into first partnership) until t time units after a certain starting point (age 18, the legal transition from adolescence to adulthood). Kaplan–Meier curves thus represent a powerful nonparametric approach that can illustrate the likelihood of women and men with different ethnic backgrounds and educational levels to remain single until a certain age without additional parametric assumptions.

In a final step, we examine whether opportunity structures can explain differences in the temporal dynamics of the transition from singlehood into first partnership between the majority and the minority groups. More specifically, we estimate counterfactual Kaplan–Meier curves among the minority groups showing what the transition from singlehood into first partnership would look like if—all else being equal—they faced the same women-to-men ratio among singles in their ethnic ingroup as well as in their ethnic- and educational ingroup as the majority group. To estimate these adjusted curves, we multiply minority groups' yearly survivor rate with an adjustment term capturing the deviation of their opportunity structure from that of the majority group. The intuition is that if, for example, a given minority group faces a worse opportunity structure than its ethnic majority counterpart, then adjusting for ethnic differences in opportunity structures should imply that they more often find a partner and thus have lower survival rates in the state of singlehood.

To capture differences in the opportunity structure regarding both ethnic and educational ingroups, the adjustment term is calculated as the product of (i) the ratio of the opportunity structure for partnering within the ethnic ingroup among the minority group to that in the Dutch reference group and (ii) the ratio of the opportunity for partnering within the ethnic and educational ingroup among the minority group to that in the Dutch reference group. Note that we restrict this adjustment term to fall between 0.95 and 1.05 because it seems unlikely that the availability of ethnic- and educational ingroup partners affects the yearly survival rate by more than 5 percentage points. We also used different cut-off points and obtained very similar results.

For illustration, consider the following example: For 28-year-old women of Turkish origin with a university degree, the adjustment term equals the ratio of Turkish men with a university degree to Turkish women with a university degree divided by the ratio of Dutch men with a university degree to Dutch men with a university degree between the ages of 23 and 33. If this ratio is smaller than 1, then multiplying it with the survivor rate will give a lower adjusted survival rate (i.e., lower singlehood rate). If the minority groups' adjusted Kaplan–Meier curves become more similar to that of the majority group, this would indicate that differences in opportunity structures partially account for ethnic differentials in the educational gradients in singlehood. Note that instead of providing a precise estimate of what the singlehood rate would look like if the opportunity structure changed, this approach is merely intended to indicate that opportunity structures play an important role in educational gradients in singlehood.

4 | Results

4.1 | Prevalence of Singlehood and Educational Gradients

Figure 1 depicts important information about the seven birth cohorts we follow from entry into adulthood until their 40s. Panel A shows that the share of university degree holders was about twice as high among ethnic majority vis-à-vis minority members. Moreover, across all ethnic groups, women were more likely to complete a university degree than men (50.90% vs. 42.75% among those of Dutch origin, 24.63% vs. 19.59% among those

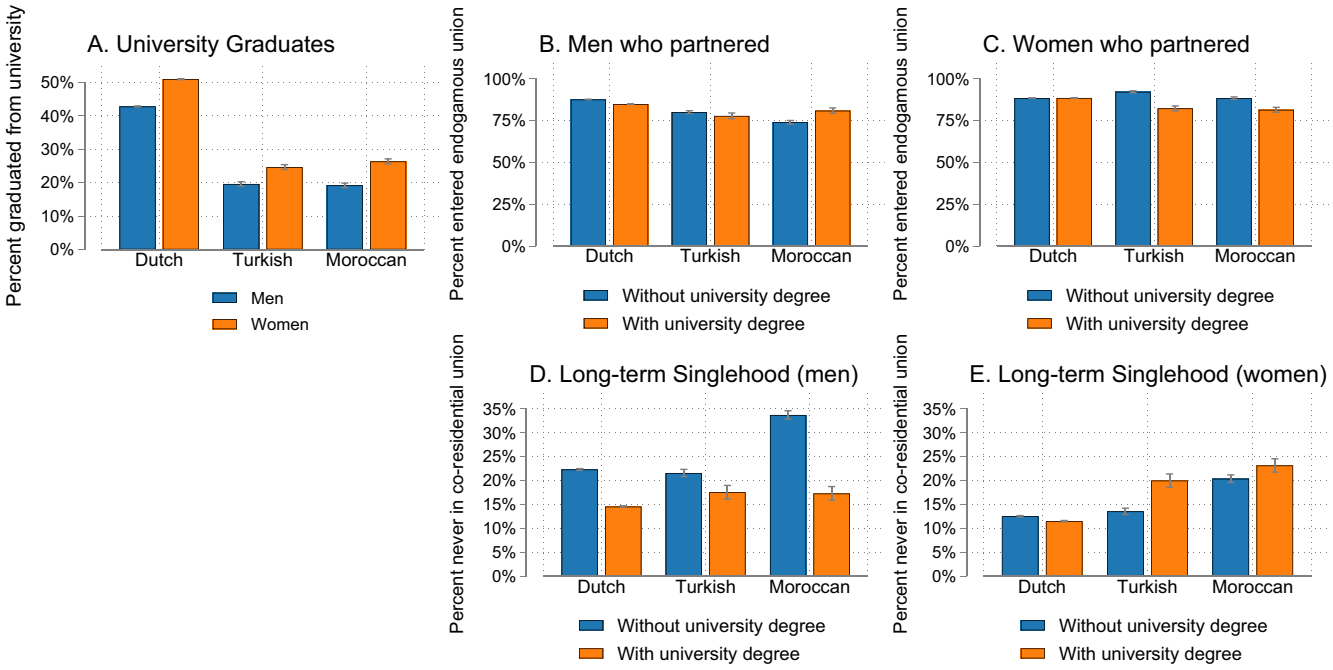

FIGURE 1 | Prevalence of educational attainment, endogamy, and singlehood among men and women of Dutch, Turkish, and Moroccan origin. Long-term singlehood refers to the absence of any co-residential union between age 18 and 40–45. Error bars reflect 95% confidence intervals. All percentages refer to individuals born between 1977 and 1983. All pairwise comparisons within panels are statistically significant at $p < 0.05$, with three exceptions: Endogamy rate between Moroccan and Turkish women with university degree (panel C), Endogamy rate between Moroccan and Dutch women without university degree (panel C), Singlehood rate between Turkish and Moroccan men with university degree (panel D), Singlehood rate between Dutch and Turkish women without university degree (panel E). [Color figure can be viewed at wileyonlinelibrary.com]

of Turkish origin, 26.34% vs. 19.12% among those of Moroccan origin). The relative risk ratio of men vis-à-vis women attaining a university degree was thus 1.19 among those of Dutch origin, 1.26 among those of Turkish origin, and 1.38 among those of Moroccan origin, indicating that co-ethnic university-educated men are scarcer among ethnic minority women than among their majority counterparts. Panels B and C focus on individuals who eventually entered a union, showing that across all ethnic groups, more than 75% found their partner within their own ethnic groups. This suggests that one's own ethnic group is the predominant focus of the search for a partner. The combination of the more pronounced gender gap in university attainment and the high endogamy rates already suggests that women of Turkish, and particularly Moroccan origin, were exposed to more competition for university-educated coethnic men than their counterparts of Dutch origin.

Panels D and E demonstrate that, in line with hypothesis 1, long-term singlehood was overall more prevalent among individuals of Turkish or Moroccan origin than among those of Dutch origin. All educational strata of the minority population were statistically significantly more likely to remain single than their counterparts of Dutch origin—the only exception being Turkish-origin men without a university degree, a group who relatively often find their partner in Turkey (see Figure S5b). Among men of Moroccan origin without a university degree, more than 30% had never entered a co-residential union until entering their 40s, compared to approximately 20% among their counterparts of Dutch origin (see panel D). Rates of long-term singlehood were approximately twice as high among university-educated minority women vis-à-vis majority women (see panel E). Comparing the prevalence of long-term singlehood across ethnic groups without distinguishing by education reveals that Turkish and Moroccan men were 2, respectively, 12 percentage points more likely to experience long-term singlehood than Dutch-origin men. Among women, the respective gaps amounted to 3 and 9 percentage points.

Panels D and E also yield support for hypothesis 2: Within each ethnic group, men with a university degree were less likely to remain single long-term than those without such a degree—a pattern that we also observed among women of Dutch origin. By contrast, among women of Turkish and Moroccan origin, the prevalence of long-term singlehood was 6, respectively, 3 percentage points higher than among those without a degree. In other words, women of Dutch origin with a university degree were 8% less likely to remain single long-term than those without such a degree; university-educated women of Turkish or Moroccan origin, however, were 48%, respectively 14% more likely to remain single than their counterparts without a university degree. The conclusions derived from these comparisons do not change meaningfully when measuring "staying single until age 40" as the dependent variable or when differentiating between the 1.5 and the second generation (see Figures S2, S3a, and S3b).

To further examine educational gradients in long-term singlehood, we also ran a series of binary logistic regression models (see Tables S4a and S4b). These models show that educational gradients continued to differ across ethnic groups and between men and women after controlling for year and country of birth (1977–1983; in the Netherlands or abroad). In particular, they reiterate the finding of the reversed educational gradient in singlehood among women of Turkish and Moroccan origin.

4.2 | Ethnic Differences in Educational Gradients in Singlehood Over the Life Course and the Availability of Partners

Can the reversed educational gradients be partially attributed to differences in the availability of university-educated ethnic ingroup partners? To address this question, we first describe how the opportunity structure changes for different ethnic and educational groups as they progress through the 20s and 30s. In a second step, we show the survival rates for long-term singlehood and adjust them for these dynamic measures of opportunity structures.

Figure 2 illustrates variation over the life course in the availability of coethnic partners and coethnic partners within one's own educational group. It depicts how the sex ratios among singles in different segments of the partnership market changed as individuals grew older. Panels A show that the ratio of available coethnic men per women increased for all groups until the mid/late 20s before it declined. Importantly, between age 28 and 37—the time when a large proportion of university-educated women transitioned from singlehood into their first union—the sex ratios of ethnic ingroup singles were less favorable for women of Turkish and Moroccan origin vis-à-vis their Dutch-origin counterparts. That said, before and after this time window, Turkish and Moroccan-origin women faced less competition for coethnic partners than their Dutch-origin counterparts. However, whether or not one eventually finds a partner or not is usually neither determined in the early 20s when people either still have the opportunity to partner later, nor in the late 30s/early 40s when entering a partnership becomes increasingly uncommon.

Panels B and C consider the availability of ethnic ingroup partners with the same level of education. They show that throughout the 20s and large parts of the 30s and across all ethnic groups, there are more lower-educated men than lower-educated women available. Among the university-educated, we observe that among those of Dutch origin, there are more women than men on the partnership market at the beginning and the end of the observation window, but that this is reversed during the late 20s/early 30s, when many individuals transition from singlehood into their first partnership. Among university-educated Turkish- and Moroccan-origin individuals, however, there are fewer men than women available on the partnership market throughout the entire observation window.

Together, Panels A–C imply that the low availability of coethnic and especially university-educated coethnic partners constituted a structural problem for university-educated women of Turkish and Moroccan origin. This shortage was particularly apparent between the late 20s and late 30s, when it became clear for most people whether they would eventually partner or not. Panels D, E, and F show the respective patterns for men, which correspond to the inverse ratios vis-à-vis women.

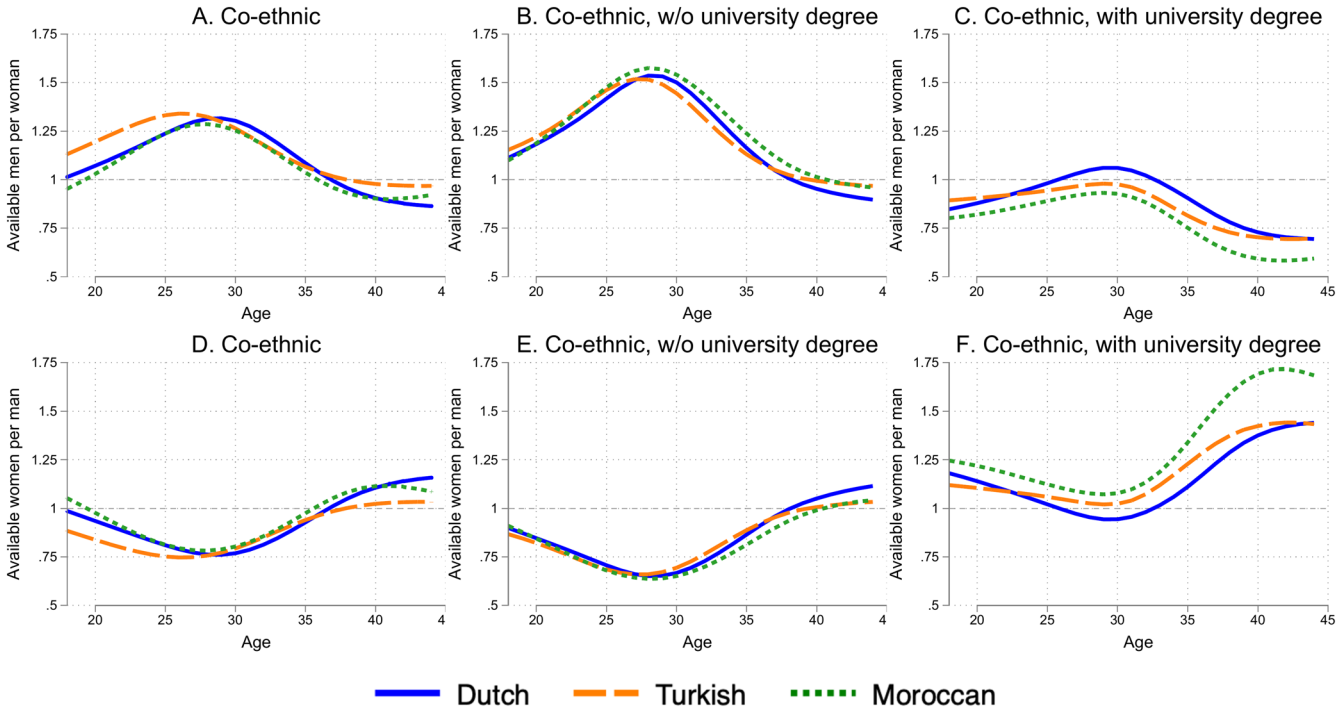

FIGURE 2 | Availability of coethnic partners with the same or a different level of education over the life course. Curves are obtained through locally weighted scatterplot smoothing (LOWESS) of the mean ratios of available partners across birth years. The lines refer to the ratio of different-sex singles to own-sex singles within the ethnic ingroup (panels A and D), within the ethnic ingroup among those without a university degree (panels B and E), and within the ethnic ingroup among those with a university degree (panels C and F). w/o = without. [Color figure can be viewed at wileyonlinelibrary.com]

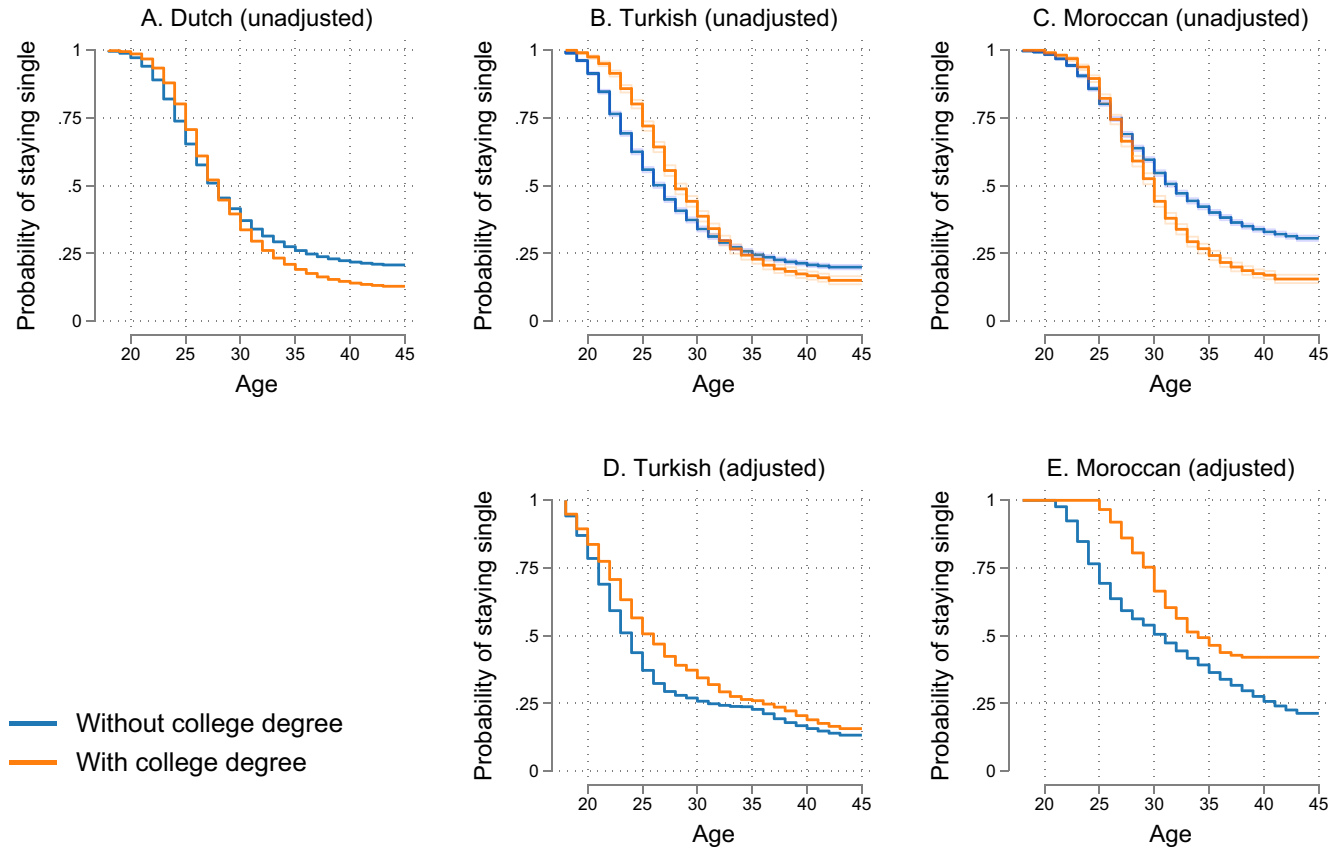

FIGURE 3 | Unadjusted and adjusted Kaplan–Meier curves among men (Event of Interest: Transition from singlehood into first partnership). Staying single refers to having never been in a co-residential union (either marriage or cohabitation) until the respective age. The light lines around the curves in the first row represent 95% confidence intervals. [Color figure can be viewed at wileyonlinelibrary.com]

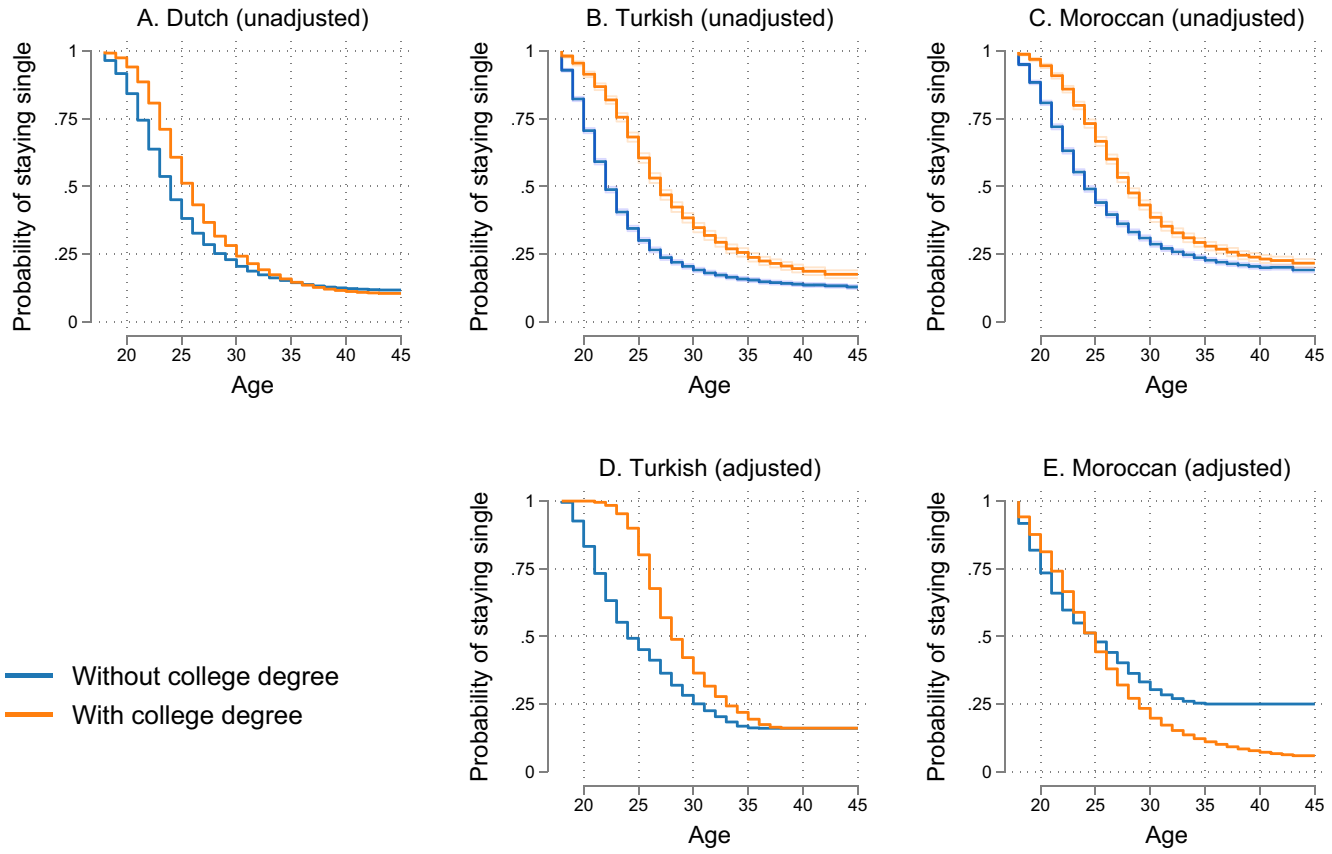

FIGURE 4 | Unadjusted and adjusted Kaplan–Meier curves among women (Event of Interest: Transition from singlehood into first partnership). Staying single refers to having never been in a co-residential union (either marriage or cohabitation) until the respective age. The light lines around the curves in the first row represent 95% confidence intervals. [Color figure can be viewed at wileyonlinelibrary.com]

The Kaplan–Meier curves in panels A–C in Figures 3 and 4 demonstrate how the educational gradients in singlehood shown in Figure 1 come about over the life course. The event of interest was entering the first co-residential union, that is, leaving the state of singlehood. Men of Dutch origin with a university degree were *less* likely to have entered their first union than their lower-educated counterparts until age 29, when their curves crossed (see Figure 3, panel A). From this age onwards, university-educated men in this group were more likely to have entered their first union. In other words, men of Dutch origin with a university degree remained single more often at earlier stages of the life course. However, during later stages of the life course, they remained single less often than their counterparts without a university degree. This results in a substantive negative educational gradient in long-term singlehood during their 40s. Turkish and Moroccan men with a university degree were also less likely to have entered a union at first but more likely to have done so than their counterparts without a degree from age 35 and 28 onwards, respectively.

University-educated women of Dutch origin also entered their first union later than their counterparts without a university degree. However, they entered partnerships at higher rates during later stages of the life course, resulting in a small negative educational gradient in singlehood. Importantly, however, among women of Turkish and Moroccan origin, singlehood rates among the university-educated exceed those without a university degree throughout the life course, bringing about the positive educational gradient (see Figure 1).

To assess the role of opportunity structures (Figure 2) for transition rates out of long-term singlehood, the Kaplan–Meier curves were adjusted for the availability of co-ethnic partners (with/without a university degree, see panels E and D in Figures 3 and 4). Recall that we allowed the annual survival rates in the original Kaplan–Meier curves to increase or decrease proportionally to the availability of partners by as much as 5%. In other words, we assumed that if minority members' opportunity structures in a given year are worse [or better] than those of their ethnic majority counterparts, the rate of those who "survive" as singles until the next year may have increased (decreased) by as much as 5%.

Under these circumstances, university-educated minority men no longer enter their first partnership more regularly than their counterparts without a university degree (see Figure 3, panel E). The intuition here is that university-educated Moroccan men, in reality, faced a very favorable opportunity structure for coethnic educational ingroup partners (see Figure 2, panel B), but that transition out of singlehood became slower and stalled eventually among this group once this opportunity structure advantage is taken away. Moroccan men without a university degree, by contrast, would have gained from facing an opportunity structure similar to that of

their majority counterparts, and their transition out of singlehood would have accelerated. Turkish men with and without a university degree would have also gained from an opportunity structure similar to their majority counterparts, as indicated by the fast transition out of singlehood until age 30, after which the curves did not cross (see Figure 3, panel E) because the opportunity structure of Turkish men without university degrees diverges from that of their Dutch counterparts (see Figure 2, panel B). Note, however, that university-educated Turkish- and Moroccan-origin men would have likely not automatically remained single if the availability of coethnic (educational ingroup) partners decreased because norms regarding ethnic endogamy are weaker for men, and they would likely not have needed to withdraw from the labor force even if their partner holds very traditional gender norms.

Among women, we observe that the transition of university-educated women of Turkish and Moroccan origin out of singlehood happened considerably faster after adjusting for the availability of co-ethnic, university-educated partners (notwithstanding delays during the early 20s among Turkish women). This is because university-educated women of Turkish and Moroccan origin faced substantially worse opportunity structures than their ethnic majority counterparts (see Figure 2, panel A). Only very minor changes can be observed for the transition out of singlehood among minority women without a university degree because their opportunity structures were similar to those of their ethnic majority counterparts (see Figure 2, panel A). As a result, the educational gradient in singlehood became considerably smaller among Turkish women—getting more similar to the pattern observed among Dutch women—and even reversed among Moroccan women. Overall, these findings supported hypothesis 4: The reversed educational gradient in singlehood partially emerges because university-educated minority women are confronted with a partnership market with a relatively low availability of co-ethnic, university-educated potential partners. Note that we do not argue that the prevalence of singlehood would have automatically been altered if the availability of partners changed.

4.3 | Sensitivity Analyses

We argued that reversed educational gradients in singlehood among women of Turkish and Moroccan origin can partially be explained by the interplay of preferences, norms, and structural opportunities. In this section, we present the results of several sensitivity analyses, which overall underscore the plausibility of this argument.

One important underlying assumption was that members of the Turkish and Moroccan minority groups, particularly those without a university degree, hold, on average, more traditional gender norms than the Dutch majority. While there is much research supporting this assumption in general (e.g., Arends-Tóth and Van de Vijver 2009; Kalmijn and Kraaykamp 2018; Khoudja and Fleischmann 2017; Röder and Mühlau 2014), we conduct a further test of this assumption, focusing on attitudes about mothers' return to the labor market after childbirth—an attitude that is pivotal to our argument. In Table 2, which summarizes data from the Netherlands Longitudinal Lifecourse Study (NELLS; Tolsma et al. 2014), higher values correspond to attitudes favoring an early return. University-educated Turkish and Moroccan women's beliefs about mothers' working arrangements are relatively progressive, and thus more similar to those of ethnic majority members vis-à-vis their co-ethnics without a university degree. A university education is also associated with more progressive attitudes among men of all ethnic groups. Turkish and Moroccan men without university degrees are least likely to approve of mothers' full-time work. Together, these findings imply that Turkish- and Moroccan-origin women typically want to pursue a career while being a mother, but also that this plan aligns, on average, much more with the attitudes of university-educated partners. Nonetheless, note that a sizable portion of university-educated minority women still partners "down" in education within their ethnic ingroup, given that most ingroup members have not obtained a university degree (see Table S5). Yet, the relative attractiveness of singlehood likely increases for those who strongly prefer a university-educated partner but cannot find one.

TABLE 2 | Attitudes toward mothers' full-time work across ethnic and educational groups, by sex.

Ethnic and educational group	"Mothers should work full-time" (higher values indicate more agreement)			
	Men		Women	
	Mean	*N*	Mean	*N*
Dutch, with university degree	1.32	322	1.85	388
Dutch, without university degree	0.01	715	0.14	821
Moroccan, with university degree	0.33	33	1.02	50
Moroccan, without university degree	−0.39	229	−0.17	268
Turkish, with university degree	0.31	35	1.00	51
Turkish, without university degree	−0.57	230	−0.30	252

Note: Respondents were asked: "Do you think that a woman should work if she has a baby (0–1 years old)/she has child in pre-school age (2–4 years old)/her youngest child attends primary school (5–12 years old)/her youngest child attends middle school (13–18 years old)?" Response options for each of these four questions included "Yes" (coded 1), "No" (coded −1), and "Don't know" (coded 0). We created an additive scale including these questions, which ranges from −4 (mothers should never work full-time) to +4 (mothers should always work full-time). Data source: NELLS, wave 1. See Part 6 of the Supplement for further information on the NELLS data.

Another important assumption was that most individuals of Dutch, Turkish, and Moroccan origin search for a partner within their ethnic ingroup and that there is a norm against exogamy. We conducted two supplementary analyses. The first shows that sizable proportions of the Turkish, Moroccan, and Dutch groups openly regard it as a problem if their son or daughter married someone from any of the respective other

groups, especially among individuals without a university education (see Table S7a). These negative attitudes toward ethnic intermarriage indicate not only that those who form a union themselves prefer endogamy but also that they make decisions under the exposure to norms that encourage them to do so. The second shows that the share of women, both with and without a university degree, who partner with an ethnic outgroup member increases over the life course. This finding is consistent with the idea that most of them look for an in-group partner during earlier stages of adulthood but then start casting a wider net (see Table S5a).

Closely related, we also checked the educational gradients for the third and fourth largest non-European ethnic minority groups in the Netherlands—those of Surinamese and Antillean origin. Among these groups, endogamy norms are relatively weak and gender norms are more progressive (Huijnk et al. 2015). As a result, we find no reversal trend of the educational gradient among women, suggesting that the pattern we find among the Turkish and Moroccan groups is not a general phenomenon across all immigrant groups but that it rather results from the interplay of strong endogamy norms, gender gaps in higher-education attainment, and on average more traditional gender norms (see Figure S6).

Another important factor is that a sizable fraction of minority members forms transnational unions, that is, unions with a partner who resided abroad until the start of the union. Existing research suggests that transnational unions are most often formed right after entering adulthood among individuals who are female, more religious, hold more conservative attitudes toward family life, and have not attained a university degree (Carol et al. 2014; Milewski and Hamel 2010). However, for university-educated minority women who have postponed partnership formation, finding a partner in Turkey or Morocco is difficult as well because most people in a suitable age range have already married at this stage as entry into marriage happens relatively early—even among those who attained higher levels of education (Gore and Carlson 2010). To be sure, we leverage information from the register data about whether a partner moved in from abroad or from within the Netherlands. These data showed that transnational unions are indeed more commonly formed among individuals without a university degree and at early stages of the life course (see Figure S5b). Transnational unions are much more common among the Turkish vis-à-vis the Moroccan group, which explains why men without a university degree of Moroccan origin were much more likely to remain single than their counterparts of Turkish origin (see Figure 1, panel D).

Finally, we examined the possibility that long-term singlehood is more common among minority members vis-à-vis the majority because their preference for it over partnership formation is stronger already during the very beginning of adulthood. The empirical evidence, however, suggests otherwise: Among 19–23-year-old individuals of Turkish and Moroccan origin in the Netherlands, 91% (respectively 94%) think that they will be married by the age of 30, showing no sign of a clear preference for long-term singlehood. Among their counterparts of Dutch origin, 75% believe they will be married, and it is possible that many of the remaining 25% aim to cohabit (see Table S7b).

5 | Discussion

Singlehood is associated with the possibility of making greater investments in friendships, education, and career (Kislev 2019; Klineberg 2013; van den Berg and Verbakel 2022), but also with childlessness, higher mortality, a lack of social support, and lower levels of well-being (Girme et al. 2022; Huxhold et al. 2022; Jalovaara and Fasang 2017; Klineberg 2013; Kulu et al. 2024; van den Berg and Verbakel 2022). It is thus important to understand which social groups are most likely to remain single in the long run. Although societies are characterized by increasing ethnic diversity and strong links between education and union formation behavior, earlier work on singlehood does not consider ethnic minorities, let alone whether education is positively or negatively associated with their likelihood of finding a partner (Bellani et al. 2017; Kalmijn 2013; Van Den Berg 2023). Research on partnership formation among ethnic minority members, in turn, often pays little attention to singlehood as a viable outcome of the partner search process (Carol 2016; Kulu and González-Ferrer 2014). It thus remains unclear whether and why the prevalence of singlehood and its educational gradient differ between ethnic minority vis-à-vis majority members. In this study, we draw on arguments proposed in the intermarriage literature (Kalmijn 1998), arguing that the interplay of preferences, third party norms, and opportunity structures affects who remains single.

Our findings show that singlehood is more common among the Turkish and Moroccan minorities vis-à-vis the ethnic majority in the Netherlands (Hypothesis 1). Minority members within almost all social strata defined by sex and level of education are more likely to remain single than their counterparts of Dutch origin. Moreover, our analyses reveal differences in educational gradients across ethnic groups (Hypothesis 2): Corresponding to the *human capital hypothesis*, which predicts that long-term singlehood is less common among higher-educated men and women, ethnic majority men and women with a university degree remain single less often than their counterparts without such a degree. Corresponding to the *specialization hypothesis*, which predicts that higher levels of education lower the likelihood of singlehood among men but increase it among women, we find among the groups of Turkish and Moroccan origin that only men are less likely to stay single if they hold a university degree but that the educational gradient in singlehood is reversed for women. These results enrich the literature examining variation in educational gradients in singlehood (Bellani et al. 2017; Hudde and Engelhardt 2023; Kalmijn 2013) with a within-country-between-groups perspective.

Our results further show how the educational gradients come about over the life course. Among men of all studied ethnic groups and among Dutch-origin women, those with a university degree delay the formation of their first union but then transition out of singlehood at high rates during their 30s. Eventually, those with a university degree are thus *less* likely to remain single long-term vis-à-vis those without such a degree. Turkish- and Moroccan-origin university-educated women also delay partnership formation, but many of them then never transition from singlehood into a partnership, resulting in the reversed educational gradient in singlehood

(Hypothesis 3). When allowing the transition rates out of singlehood to change with the availability of coethnic partners (with the same level of education), we observe that the educational gradients reverse. This suggests that—in addition to any direct economic dependencies between women and men as proposed by the *specialization hypothesis*—the lack of available partners plays a key role in explaining these patterns (Hypothesis 4): There are fewer university-educated minority men than women available on the partnership market, and partnerships with ethnic majority members of lower-educated coethnics are more likely to conflict with third-party norms, partner preferences, and/or their gender roles. The lack of partners in their educational and ethnic ingroup thus means that long-term singlehood emerges as a viable option for many over time as an alternative. This demonstrates that the interplay of preferences, norms, and structural constraints on the partnership market not only affects whether individuals partner across ethnic, racial, or educational boundaries (Choi and Tienda 2017; Schwartz 2013) but also whether they partner at all.

5.1 | Limitations and Directions for Future Research

This study has a number of limitations. First, our measure of opportunity structures does not take regional differences into account. It might be the case that the ratio of single men to single women varies across cities or provinces, implying that individuals looking for a partner face different opportunity structures depending on the locality they live in. However, partnering across city and province boundaries is prevalent in the Netherlands (see final paragraph in "Data and Measures"). Moreover, in the Swedish context, where distances between cities are arguably larger compared to the Netherlands, partner choice is largely robust to adjusting for regional differences in opportunities (Mood and Jonsson 2022). Second, we cannot determine from the registers whether individuals intend to enter a relationship. If they are, for example, systematic differences in intentional singlehood across genders or ethnic- or educational groups, this would imply that the ratio of men to women who constitute potential partners would change. While our supplemental analyses suggested otherwise (see Table S7b), future research may use longitudinal data on partnership formation intentions and personal values to assess the extent to which this factor shapes ethnic differences in long-term singlehood. Third, the register data do not allow us to observe whether individuals entered non-coresidential relationships. In principle, it is possible that a tight housing market initially prevents couples from moving in together. However, maintaining a committed relationship over more than 5 years without cohabiting likely remains the exception, especially when considering individuals in their 30s (Liefbroer et al. 2015). Finally, another task for future research is to study ethnic differences in educational gradients in other European societies, such as Germany, France, the United Kingdom, or Sweden, which all include sizable minority groups with origins in countries where more traditional gender roles are prevalent. An important question is whether our results replicate in those contexts, given any country-level similarities and differences in terms of the prevalence of singlehood, gender ideologies, and women's labor force participation (Bellani et al. 2017; Eurostat 2024; Grunow et al. 2018).

5.2 | Implications and Conclusions

Despite these limitations, our findings carry important implications for ongoing debates at the intersection of family formation behavior and integration. The higher prevalence of singlehood and its reversed educational gradient among minority women imply that these women, by not violating the norm against marrying a man from another ethnic group, are in the end—on average—less affected by traditional gender norms within their household and thus have the opportunity to utilize their human capital in the labor market and other domains (e.g., civil society). This additional freedom may enable them to attain more prestigious occupations and to act as role models for minority girls of the next generation. On the other hand, university-educated minority women who do not find a partner will be less likely to have children to whom they could pass on advantages associated with their education. This is important for the integration of the third generation insofar as parental socioeconomic status is often associated with more social and cultural integration (Zhao and Drouhot 2024). These implications are not only relevant to researchers aiming to understand intergenerational processes of integration but should also be considered by policymakers in charge of designing family- and integration policies in diversifying societies.

To conclude, this study shows that educational gradients in long-term singlehood are reversed among women of the largest minority groups of Turkish and Moroccan origin as a result of the interplay of preferences, third party norms, and structural opportunities. These dynamics illustrate that researchers studying partnership and family formation need to take the increasing ethnic diversity of societies into account.

Acknowledgments

In this study, we make use of data from the Dutch register data provided by Statistics Netherlands (CBS).

Data Availability Statement

Results based on authors' calculations using non-public microdata from Statistics Netherlands. Kasimir Dederichs and Nan Dirk de Graaf are affiliated with Nuffield College, University of Oxford; Evelina Akimova is affiliated with Purdue University. The data analyzed in this study contain information about the entire population of the Netherlands and are therefore subject to strict data protection. Under certain conditions, these microdata are accessible for statistical and scientific research. For further information: https://www.cbs.nl/en-gb/our-services/customised-services-microdata/microdata-conducting-your-own-research and microdata@cbs.nl. The authors are not allowed to share these data with others directly. However, we give further information about obtaining access to the Dutch register data in the Appendix and are willing to assist researchers who wish to replicate our study.

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Supporting Information

Additional supporting information can be found online in the Supporting Information section. **Data S1:** Supporting Information.