Demography (2021) 58(2):571–602 Published online: 22 February 2021
DOI 10.1215/00703370-9000609

Educational Assortative Mating in Sub-Saharan Africa: Compositional Changes and Implications for Household Wealth Inequality

Luca Maria Pesando

ABSTRACT Sub-Saharan Africa (SSA) is undergoing rapid transformations in the realm of union formation in tandem with significant educational expansion and rising labor force participation rates. Concurrently, the region remains the least developed and most unequal along multiple dimensions of human and social development. In spite of this unique scenario, never has the social stratification literature examined patterns and implications of educational assortative mating for inequality in SSA. Using 126 Demographic and Health Surveys from 39 SSA countries between 1986 and 2016, this study is the first to document changing patterns of educational assortative mating by marriage cohort, subregion, and household location of residence and relate them to prevailing sociological theories on mating and development. Results show that net of shifts in educational distributions, mating has increased over marriage cohorts in all subregions except for Southern Africa, with increases driven mostly by rural areas. Trends in rural areas align with the *status attainment hypothesis*, whereas trends in urban areas are consistent with the *inverted U-curve framework* and the increasing applicability of the *general openness hypothesis*. The inequality analysis conducted through a combination of variance decomposition and counterfactual approaches reveals that mating accounts for a nonnegligible share (3% to 12%) of the cohort-specific inequality in household wealth, yet changes in mating over time hardly move time trends in wealth inequality, which is in line with findings from high-income societies.

KEYWORDS Educational assortative mating • Inequality • Development • International Wealth Index • Sub-Saharan Africa

Introduction

Over the past decades, there has been growing interest in patterns of educational assortative mating around the world. Assortative mating is a powerful determinant of societal change as it shapes the way people organize within families, affecting in turn individuals' access to resources and their distribution across families (Schwartz 2013). Assortative mating with regard to couples' socioeconomic characteristics is vital to understanding a whole set of dynamics in the demographic makeup of house-

ELECTRONIC SUPPLEMENTARY MATERIAL The online version of this article (https://doi.org/10.1215/00703370-9000609) contains supplementary material.

holds, such as family formation, composition, and dissolution (Schwartz and Han 2014). It also has consequences for outcomes that are directly or indirectly linked to the family, such as longevity, health, and fertility preferences and behavior (Huber and Fieder 2011; Rauscher 2020). A proper understanding of assortative mating patterns ultimately sheds light on fundamental changes underlying the demography of the population and the characteristics of the social stratification system. This article explores trends, determinants, and implications of educational assortative mating for inequality in sub-Saharan Africa (SSA), a region of the world that has experienced rapid socioeconomic and demographic change over the past half-century yet has been largely neglected in the literature on assortative mating and social stratification.

The study achieves these goals following three interrelated and incremental steps, labeled for convenience *trends*, *determinants*, and *implications*. First, using 126 Demographic and Health Surveys (DHS) collected between 1986 and 2016, I provide an overview of educational assortative mating patterns across 39 countries in SSA (*trends*). Despite a series of global and comparative studies documenting declining hypergamy (i.e., unions in which the male partner has higher education than the female partner) around the world (Esteve et al. 2012, 2016), rarely has the assortative mating literature focused exclusively and comparatively on patterns of change within and across SSA, with the exception of Lopus and Frye (2020). Evidence is lacking on questions as simple as whether educational assortative mating has increased or decreased over time. A more comprehensive study of assortative mating in SSA is critical for several reasons. First and foremost, SSA is undergoing swift transformations in union formation (e.g., delays in mean ages at first union) (Bongaarts et al. 2017; Juárez and Gayet 2014; Shapiro and Gebreselassie 2014); increasing educational attainment, particularly for women (Frye and Lopus 2018; Grant 2015); and expanding female labor force participation rates (Lloyd and National Research Council 2005). Underlying these changes has been a massive growth in urbanization, spreading modern ideals stressing the value of education, encouraging later marriage, and reducing the influence of kin in decisions about the timing of marriage and choice of spouse (Cherlin 2012; Singh and Samara 1996). Yet, demographic change and urbanization have followed uneven trajectories within SSA, partly as a function of the various cultural specificities, diversified economies, and political systems, but also as a result of crises (e.g., conflicts, civil wars, food shortages, and the HIV/AIDS epidemic) that countries or entire subregions have experienced (Lopus and Frye 2020; Tabutin and Schoumaker 2004). Hence, a closer look at within-region dynamics is likely to deliver a more nuanced picture of the phenomenon, highlighting subregional heterogeneity and diverging patterns of change that are masked in global studies of mating.

Alongside these dramatic changes, evidence suggests that SSA countries still lag behind other low- and middle-income countries (LMICs) in areas such as gender and couple-related dynamics. For instance, gender gap reversals in education are occurring more slowly in SSA than in other regions (Esteve et al. 2016; Psaki et al. 2018). Similarly, previous research has found stark gender imbalances in intrahousehold bargaining dynamics (Ashraf et al. 2014; Behrman 2019), to the extent that SSA remains the only region where the share of households in which the husband is the sole decision-maker reaches 40% (Pesando and GFC Team 2019). Accordingly, there is ground to hypothesize that trends toward increasing assortative mating documented globally—typically unfolding along with reversals in gender gaps in education and increases in women's empowerment (De Hauw et al. 2017; Esteve et al. 2012)—might be playing out differently in SSA.

One challenge in studies of assortative mating (*determinants*) is to determine whether increases in educational homogamy—male and female partners having the same level of education—arise because of secular changes in educational attainment or because of shifts in mating itself. For instance, the narrowing of the gender gap in education may increase the chance that someone with secondary education is married to someone else with secondary education, even in the absence of changes in the assortativeness of marriage (Liu and Lu 2006). As a second contribution of this study, I therefore compare *observed* patterns of mating with those predicted under *random* mating and investigate the extent to which trends are driven by compositional changes (i.e., changes in educational distributions) versus residual changes over and above changes in educational distributions. In other words, I explore the extent to which shifts toward homogamy can be accounted for by mechanical changes that result from proportionally faster increases in women's education compared with forces related to the shifting value of education and spouses' preferences for educational resemblance. To address this question, I use contingency tables and marital sorting parameters to conduct analyses by marriage cohort, subregion of SSA, and household location of residence. I contextualize my findings in light of the main theoretical perspectives on mating and development.

As a third contribution (*implications*), I exploit the aforementioned accounting-based methodology (observed vs. random mating) combined with a variance decomposition approach to assess implications of educational assortative mating for household wealth inequality. I measure wealth through the International Wealth Index (IWI)—the first comparable asset-based index covering the complete developing world (Smits and Steendijk 2015)—and define household wealth inequality as inequality in asset possession *between* households. I address two counterfactual questions. First, what would happen to the wealth distribution if in every marriage cohort mating was random instead of assortative (within-cohort perspective)? Second, what would happen to wealth inequality if couples from the latest marriage cohort matched assortatively, as those in the previous cohorts did (across-cohort perspective)? These analyses address the broader puzzle of whether (changes in) marital sorting on education affects (changes in) household wealth inequality, another question that has not been explored in the SSA context despite the high levels of inequality, and that has rarely been addressed in the assortative mating literature in general.

Background

The Sub-Saharan African Context: Educational Expansion, Urbanization, and Family Change

Over the last few decades, mean grades of schooling have increased among young women in all regions of the developing world (Mensch et al. 2005; Psaki et al. 2018). Yet in their recent global study of declining educational hypergamy, Esteve et al. (2016) claimed that African countries have the lowest proportions of the population with college education and the lowest levels of women's education compared with men's. Time trends indicate little progress in expanding college education in Africa, but substantial progress in women's education has contributed to narrowing gender gaps. A key factor underlying the expansion of education has been the massive growth in the share of the population living in cities, which started from very different levels across subregions: Southern Africa was already far more urbanized than the other subregions in the 1950s. Heterogeneity in the degree of urbanization between subregions has lessened since the 1950s. The least urbanized regions 50 years ago (Eastern, followed by Western and Central Africa) have experienced the highest urban growth; the urban population multiplied by roughly 20 between 1950 and 2000 (Tabutin and Schoumaker 2004). The continent's colonial histories also account for heterogeneity in educational expansion, with lower baseline levels of educational access in many of the former French colonies and higher baseline levels in many of the former British colonies (Lopus and Frye 2020).

In tandem with these macrostructural transformations, African families have changed in domains that likely relate to assortative mating patterns. First and foremost, age at marriage has risen throughout the continent (Bongaarts et al. 2017; Tabutin and Schoumaker 2004). According to data from the United Nations Department of Economic and Social Affairs (UN-DESA) (2015), the singulate mean age at marriage is now greater than 18 in the majority of countries in the region. This is relevant given that the age at which men and women form unions is influenced by social norms and expectations regarding their roles as spouse and parent—factors that are likely to change with globalization, urbanization, and rising educational attainment. Mensch et al. (2005) found marked reductions in the percentage of 15- to 19-year-olds married throughout most LMICs over the past 30 years. These reductions were particularly striking in SSA. Even so, SSA remains the region with some of the highest rates of child marriage in the world (Koski et al. 2017), for the most part driven by Western and Central Africa (e.g., Niger, Central African Republic, and Chad). Western and Central Africa are also the regions with the highest percentage of women ever married by age 25, whereas the likelihood of still being unmarried at 25 is higher in Eastern and Southern Africa (Mensch et al. 2005).[1] Southern Africa has had a late marriage pattern since the early 1970s and is now the only subregion to exhibit nonnegligible shares of never-married individuals (about 15% of women at age 45), partly because of labor migration (Tabutin and Schoumaker 2004; see also Table A1, online appendix).

Western Africa is also distinctive in that in most countries, age at marriage has been increasing for women but not for men, likely because of changes in the practice of polygyny, which is an idiosyncratic feature of the region (Tabutin and Schoumaker 2004). Research suggests that in SSA, the expansion of schooling has had some impact on delaying women's age at marriage, yet a considerable fraction of the increase cannot be accounted for by changes in education. Conversely, rising costs of establishing a household have been found to contribute more than increasing educational attainment to men's marriage delays (Mensch et al. 2005).

Differential increases in men and women's ages at first union affect interspousal age differences, whose variation across societies can be interpreted in terms of two interrelated factors: kinship structure and women's status. Casterline et al. (1986) suggested that in patriarchal societies and in societies characterized by patrilineal

[1] Trends in ages at first marriage are intertwined with educational expansion and urbanization patterns. In Eastern and Southern Africa, more than four times as many women with zero to three years of schooling married by age 18 compared with women who had eight or more years of schooling (Mensch et al. 2005).

kinship organization, the spousal age difference tends to be relatively large. Conversely, the age difference tends to be smaller in settings where the traditional social structure allows for a more equal status of spouses or where exposure to Western family forms and modernization processes have improved the status of women, such as Southern Africa. Indeed, variation in interspousal age differences is also explained by marriage market constraints, namely, age structure. Research from SSA suggests that age differences at first marriage have narrowed, although they remain important in a subset of Western African countries, such as Guinea-Bissau and Sierra Leone (Odimegwu 2020; Tabutin and Schoumaker 2004).

Theoretical Perspectives on Educational Assortative Mating, Development, and Inequality

A focus on temporal and spatial variation in the association between spouses' educational attainment originated from studies on high-income societies around the 1960s, driven by the ideas that industrialization brings progress and that differences in countries' level of socioeconomic development may explain variation in educational homogamy. The underlying logic—embedded in theoretical perspectives such as modernization theory (Blau and Duncan 1967; Parsons 1971), industrialization theory (Kerr 1983), and individualization theory (Beck 1986; Giddens 1991)—builds on the premise that industrialization and social modernization unfold in tandem with trends toward social openness and meritocratization, thus weakening societies' social structures and social boundaries.

Scholars have formulated and tested at least three competing hypotheses relating socioeconomic development and educational homogamy both across countries and within countries over time (Smits et al. 1998). First, the general openness hypothesis postulates that development leads to less educational homogamy because of the decrease in parents' control over marriage and the increase in the number of contacts between individuals from different classes and status groups, occurring through greater geographical mobility, more education, and the spread of mass communication (Blossfeld 2009; Smits et al. 1998). Second, the status attainment hypothesis postulates a positive relationship between economic development and educational homogamy due to the increased importance of education as a marker of social status, which in turn pushes high-educated individuals to increasingly select their partners based on educational considerations (Blossfeld and Timm 2003; Kalmijn 1998). Third, the inverted U-curve hypothesis combines the previous two hypotheses and predicts (1) an increase in educational homogamy in the first phase of the industrialization process in which status considerations and parental authority still play an important role in partner choice, and (2) a decrease in educational homogamy in the second phase, in which rising wages and more binding laws loosen the parental bond and give individuals more freedom to marry whom they like.

The degree of partners' homogamy along specific socioeconomic characteristics has also been widely hypothesized to have the potential to shape different dimensions of inequality. Among these dimensions is between-household income inequality. Regarding marital sorting on education—provided that educational attainment and later-life earnings are reasonably correlated—societies in which highly educated individuals marry other highly educated individuals and low-educated individuals marry low-educated individuals will be more unequal than those in which highly educated individuals marry low-educated individuals. Increased educational assortative mating may affect inequality through changing the distribution of household configurations (*types*), regardless of whether the increase itself is produced by shifts in shares of people with certain levels of education (*structure*) or changed sorting behavior (*preferences*). Given that household types possess different amounts of human capital and hence different income potentials, a changed distribution of household types is expected to change inequality between types (Breen and Andersen 2012).[2]

Review of Evidence

Studies evaluating the applicability of the aforementioned hypotheses have delivered mixed findings. Evidence in favor of trends toward more educational homogamy has been found for highly developed Western societies, mostly the United States and some European countries (Blossfeld and Timm 2003; Kalmijn 1991; Qian and Preston 1993; Schwartz and Mare 2005). Gradually, research examining trends and variation in educational assortative mating has expanded to other societies across Latin America (Esteve and McCaa 2007; Esteve et al. 2013; Ganguli et al. 2014; Gullickson and Torche 2014; Torche 2010), East Asia (Hu and Qian 2015; Park and Smits 2005; Smits and Park 2009), and South Asia (Borkotoky and Gupta 2016; Prakash and Singh 2014), adopting a more large-scale comparative approach (Esteve et al. 2012, 2016; Pesando 2021; Raymo and Xie 2000; Smits 2003; Smits et al. 1998, 2000).

Research including LMICs suggests a more complex picture. Using data from 65 countries, Smits et al. (1998) found a cross-sectional inverted U-shaped relationship between level of development and educational homogamy. The status attainment hypothesis (higher development, higher homogamy) was supported only when the least-developed countries were compared with countries at intermediate levels of development, whereas the general openness hypothesis (higher development, lower homogamy) was supported when countries at intermediate levels were compared with the most developed ones. Consistent with this finding, in a follow-up study covering 55 countries, Smits (2003) found declining educational homogamy and more openness in more rapidly developing countries.

Although examining trends and variation in educational assortative mating has taken a rather global and comparative scale (except for SSA), studies assessing implications of assortative mating for inequality have centered primarily on high-income societies. Notable exceptions are studies of China and Latin America (Brazil, Chile, and Mexico) by Hu and Qian (2015) and Torche (2010), respectively. From this body of studies, there is overwhelming agreement that educational assortative mating plays a small role in explaining trends in household income inequality. In the U.S. context, Western et al. (2008) found that neither educational inequalities in women's incomes nor assortative mating contributed significantly to the rise in inequality. Similar results for the United States were found by Breen and Salazar (2011), Eika et al. (2019), and

2 Part of this process is contingent on realizing postmarital income potential, which tends to be achieved through postmarital labor supply decisions (Breen and Andersen 2012; Gonalons-Pons and Schwartz 2017).

Greenwood et al. (2014). In the European context, similar results were documented by Breen and Salazar (2010) for the United Kingdom and by Boertien and Permanyer (2019) for a subset of 21 countries. A finding by Breen and Andersen (2012) represents a minor exception to this general pattern: in Denmark, where inequality increased but educational homogamy declined between 1987 and 2006, changes in assortative mating increased income inequality by about 7%—almost fully driven by changes in the educational distribution of men and women rather than in the propensity to choose a partner with a given level of education.

Hypotheses have been proposed to shed light on the weak relationship between educational assortative mating and income inequality (Schwartz 2013). One postulates that increases in educational homogamy may not be large enough to produce meaningful shifts in inequality (Breen and Salazar 2011). Yet Boertien and Permanyer (2019) showed that even under extreme counterfactual scenarios, results do not change. Another hypothesis is that increases in educational homogamy among some types of couples might be offset by declines among other types of couples, such that the overall effect on inequality is negligible (Rosenfeld 2008). Alternatively, wives' education might not be as highly correlated with earnings as one would think. The strength of this correlation very much depends on postsorting labor supply adjustments, but if most women exit the labor force upon union formation, the correlation between the two would be driven down. This might well be the case in Western Africa, given the long tradition of informal trade and the powerful role that women play in it (Yusuff 2014). In light of the latter hypothesis, some of the most recent literature has claimed that women's relative position within the couple and their labor supply decisions might constitute the "missing link" in explaining increases in family income inequality (Gonalons-Pons and Schwartz 2017).

Contributions and Hypotheses

Although comparative studies included a few SSA countries (e.g., Smits et al. 1998, 2000), hypotheses on the evolution of educational assortative mating have never been wholly evaluated in the African context. This study attempts to do so by adopting a time-trend perspective, with the underlying premise that SSA countries undergo processes of development over time.[3] It is challenging to generalize claims about patterns of educational assortative mating in a region of the world as diverse and heterogeneous as SSA, yet documenting trends by subregion and location of residence (urban/rural) is a first step toward a better understanding. Given that SSA countries rank lowest on development indices such as the Human Development Index, the preceding theories would suggest an *increase* in educational assortative mating over time in line with the status attainment hypothesis, with considerable differences by subregion of SSA and location of residence according to their different rates of modernization and urbanization.

I hypothesize a more marked increase in assortative mating in rural areas, paralleled by a less marked increase in urban areas, where the general openness hypothesis is

[3] In another study, I am conducting analyses targeting the relationship between educational assortative mating and country-level indicators of development, such as the Human Development Index and gross domestic product per capita.

more likely to take hold, driven by greater geographical mobility, educational expansion, cross-cultural exchange, and mass communication. In addition, widespread geographical heterogeneity in trajectories of development and sociocultural practices (e.g., child marriage, arranged marriage, polygyny, patriarchy, and patrilocality) and their differential prevalence across SSA subregions (more prevalent in Western and Central Africa, and less so in Eastern and Southern Africa) leads me to expect heterogeneous patterns of assortative mating by subregion of SSA: Western Africa and Southern Africa are expected to follow the most diverse, and likely opposed, trajectories.

Previous scholarship also provides no assessment of the implications of changing assortative mating patterns for inequality in SSA. The main challenge in this context is the lack of good measures of household income and, especially, the lack of measures of each partner's earnings. However, most surveys like the DHS collect information on household assets that enter the computation of a household-level wealth index. In contexts where household income or consumption is absent, wealth indices are effective indicators of long-term socioeconomic position, living standards, or material well-being of households (Filmer and Pritchett 1999, 2001; McKenzie 2005; Sahn and Stifel 2000). Shimeles and Ncube (2015) suggested that this is also the case in Africa. My analysis investigates whether educational assortative mating has implications for inequality defined as inequality between households in asset possession. If partners' matching on education translates into similar asset-accumulation potential on the part of both partners—provided that wealth is not simply inherited across generations—educational assortative mating might matter for wealth inequality.[4] Despite the limitations, an approach of this kind has the potential to lay some foundations for a better understanding of the relationship between assortative mating and inequality in the African context.

Data and Measures

The analysis uses pooled cross-sectional DHS data from 126 survey waves across 39 SSA countries. DHS are publicly available, nationally representative surveys of women ages 15–49 collected by ICF International in collaboration with host-country governments. Standardized questionnaires allow for comparisons across countries and survey waves. SSA countries are grouped in four regions as classified by the United Nations Statistics Division: Western (14 countries), Central (8 countries), Eastern (12 countries), and Southern Africa (5 countries) (see Table 1). The analysis spans 30 years; the oldest surveys were collected in 1986 in Liberia and Senegal, and the most recent survey was collected in 2016 in Ethiopia. Additional details on the countries included, the number of waves, and the number of observations (couples) per wave are provided in Table A2 in the online appendix.

In line with the observation that the focus on marriage cohort, rather than survey year or birth cohort, is better able to detect trends in educational homogamy (Mare 1991), I assess time trends over marriage cohort. A similar perspective has been adopted in prominent studies in the field (Casterline et al. 1986; Smits and Park 2009). I construct 10 five-year marriage cohorts: <1970, 1970–1974, 1975–1979, 1980–1984,

[4] For a discussion of the validity of inequality measures based on asset indices, see, for example, McKenzie (2005) and Wittenberg and Leibbrandt (2017).

Table 1 Number of countries and survey waves included in the analysis, by region of sub-Saharan Africa

Regional Classification of Sub-Saharan African Countries			
Western	Central	Eastern	Southern
Benin (4)	Angola (1)	Burundi (2)	Botswana (1)
Burkina Faso (4)	Cameroon (4)	Comoros (2)	Lesotho (3)
Cote d'Ivoire (2)	Central African Republic (1)	Ethiopia (4)	Namibia (4)
Gambia (1)	Chad (3)	Kenya (6)	South Africa (1)
Ghana (6)	Congo (2)	Madagascar (4)	Swaziland (1)
Guinea (3)	Congo, DR (2)	Malawi (5)	
Liberia (3)	Gabon (2)	Mozambique (3)	
Mali (4)	Sao Tome and Principe (1)	Rwanda (5)	
Mauritania (1)		Tanzania (5)	
Niger (4)		Uganda (5)	
Nigeria (4)		Zambia (5)	
Senegal (7)		Zimbabwe (6)	
Sierra Leone (2)			
Togo (3)			
14 Countries, 48 Surveys	8 Countries, 16 Surveys	12 Countries, 52 Surveys	5 Countries, 10 Surveys

Notes: The regional classification is from the United Nations Statistics Division. The number of survey waves per country is shown in parentheses.

1985–1989, 1990–1994, 1995–1999, 2000–2004, 2005–2009, ≥2010.[5] This approach is sensible when using DHS data because these surveys are collected at nonregular intervals, making data from only some countries available in each survey year.

Although the DHS collect couple-level files in some countries, this study relies on information provided in the women's file to maximize the number of couples in the analysis; because the couple-level file is not available for every country, the sample of couples would be restricted by about two-thirds. I use the partnership information provided by women to construct a couple-level data set in which wives and husbands are nested within couples.[6] Women whose marital status is missing or who provide no information on their own and/or their partner's educational attainment are excluded from the sample. I keep couples who are currently married or living in a cohabiting union ("living together") and rely on the DHS definition of marital union as both civil and customary marriages, both of which are prevalent in the African context (van de Walle and Meekers 1994). In so doing, I follow previous scholarship suggesting that in settings where the definition of union is ambiguous, the process of union formation is fluid, and distinguishing between formal and informal unions may be impossible, making the combination of the two the proper focus (Casterline et al. 1986; Clark and Brauner-Otto 2015).

[5] The first and last cohorts span more than five years because cohorts for fewer than five years provide sample sizes that are too small for analyses.

[6] I use the terms "husband" and "male partner," "wife" and "female partner," and "marriage" and "union" interchangeably.

The sample is further restricted to couples in which women are between the ages of 25 and 40. By age 25, virtually all women have reached their highest educational level, and 95% of them have entered their first union, therefore reducing concerns about censoring on single marital status or education (Esteve et al. 2012). To avoid specification problems, I perform sensitivity analyses using both narrower and wider age ranges (15–49, 20–35, and 30–45). Because the DHS provide data on only year of first union and include information on the education of only the current partner/husband, the sample is limited to couples in which women have been married or have cohabited only once—about 82% of women (in a spirit similar to the approach of Casterline et al. 1986).[7] These restrictions provide a sample of 416,038 couples with complete information on marital status, year of first union, and educational level of both partners.

The DHS include a categorical and a continuous measure of educational attainment: highest level attained and grade attained. The categorical variable is coded as 0 for no education, 1 for primary, 2 for secondary, and 3 for higher. The continuous variable ranges from 0 to 23. Although the continuous variable offers a more precise measure of schooling achievement, it ignores the importance of academic boundaries, which matter more for determining whether individuals marry "within their group." Furthermore, this latter classification captures similar stages in the educational career, even if these stages represent a different number of years across countries (Frye and Lopus 2018). Table 2 provides descriptive statistics on the number of couples and the highest level (panel A) and grade (panel B) attained by wives and husbands, by marriage cohort. Estimates suggest that couples from the earliest marriage cohort (<1970) have, on average, some lower primary schooling, with husbands completing 2.7 grades and wives completing around 1.4 grades. Conversely, couples from the latest marriage cohort (≥2010) possess upper primary/secondary education, with wives and husbands attaining an average of 8.3 and 9 school grades, respectively. Overall, the table shows a steep increase in educational attainment across marriage cohorts, with a proportionally faster increase but no gender gap reversal in wives' educational attainment. Most importantly, a comparison between the two panels shows a high degree of consistency between the categorical and the continuous measures; hence, I confidently rely on the former in all analyses that follow. For instance, wives' averages in the latest marriage cohort are 5.1 and 5.8 times their <1970 value for the categorical and continuous measures, respectively; husbands' averages are 3.2 and 3.3 times their <1970 value. Table A3 in the online appendix provides descriptive statistics on spousal differences in age by marriage cohort and shows similar patterns. The average difference is 11 years in the earliest marriage cohort but is reduced by about one-half in the latest cohort.

To measure household wealth, I rely on the IWI, the first comparable asset-based wealth index measuring the level of material well-being and standard of living in the complete developing world. IWI runs from 0 to 100, with 0 representing households having none of the assets and the lowest-quality housing, and 100 representing households having all assets and the highest-quality housing. Information collected

[7] The DHS include a question on the woman's total number of unions. All women reporting two or more unions are considered to have ever been remarried. The sample is not restricted to men who have married only once. Indeed, the high prevalence of polygyny, particularly in Western Africa, suggests that many of the sampled men have married more than once (Fenske 2015; Reniers and Tfaily 2012; Smith-Greenaway and Trinitapoli 2014).

Table 2 Summary statistics on couples' education, by marriage cohort

	a. Highest Level Attained					b. Grade Attained				
		Wife		Husband			Wife		Husband	
Marriage Cohort	*N*	Average	Ratio Over <1970	Average	Ratio Over <1970	*N*	Average	Ratio Over <1970	Average	Ratio Over <1970
<1970	4,956	0.32 (0.011)	.	0.54 (0.015)	.	4,893	1.43 (0.055)	.	2.71 (0.081)	.
1970–1974	12,718	0.40 (0.008)	1.2	0.62 (0.010)	1.1	12,536	1.83 (0.042)	1.3	3.09 (0.059)	1.1
1975–1979	25,384	0.46 (0.007)	1.4	0.67 (0.009)	1.2	24,959	2.18 (0.036)	1.5	3.37 (0.047)	1.2
1980–1984	40,607	0.55 (0.006)	1.7	0.75 (0.008)	1.4	40,069	2.62 (0.032)	1.8	3.76 (0.040)	1.4
1985–1989	55,511	0.63 (0.006)	2.0	0.83 (0.007)	1.6	54,927	3.00 (0.030)	2.1	4.19 (0.037)	1.5
1990–1994	74,626	0.68 (0.006)	2.1	0.91 (0.007)	1.7	73,977	3.26 (0.030)	2.3	4.57 (0.036)	1.7
1995–1999	82,918	0.79 (0.006)	2.5	1.02 (0.007)	1.9	82,293	3.82 (0.032)	2.7	5.17 (0.038)	1.9
2000–2004	69,789	0.93 (0.007)	2.9	1.15 (0.008)	2.1	69,358	4.56 (0.038)	3.2	5.89 (0.043)	2.2
2005–2009	37,903	1.22 (0.010)	3.8	1.39 (0.010)	2.6	37,633	6.11 (0.055)	4.3	7.21 (0.057)	2.7
≥2010	11,626	1.62 (0.017)	5.1	1.72 (0.016)	3.2	11,565	8.31 (0.092)	5.8	9.05 (0.092)	3.3
Total	416,038					412,210				

Notes: The table presents weighted estimates using sample DHS weights. Standard errors are shown in parentheses. "Ratio Over <1970" gives the relative ratio of the value in each cohort compared with the <1970 cohort (i.e., the earliest)

on the possession of consumer durables, access to basic services, and housing characteristics is entered into a factor analysis (principal component analysis), from which the first factor is selected as the wealth index. For additional details on the IWI, see Smits and Steendijk (2015) and section B of the online appendix.

Because of the inclusion of a household identifier, the IWI can be merged to the original DHS data sets. However, the IWI cannot be computed for some DHS surveys collected before 1990. Hence, the analytical sample included in the wealth analysis is reduced from 416,038 to 392,486 couples (~94% of the original sample), for a total of 112 survey waves across 38 countries, rather than 126 waves across 39 countries.[8] The main benefit of the IWI over standard wealth indices provided in the DHS lies in its comparability across countries and over time. The standard DHS wealth index is specific to the situation in each country at the time of the survey, making it a reliable measure only for households within a certain country-year combination (Smits and Steendijk 2015).

[8] The survey waves that are excluded in the wealth analysis because of the unavailability of the IWI are shown in italic type in Table A2 (online appendix).

Trends in Couples' Educational Composition

Figure 1 plots the share of unions in which men and women have the same educational level (educational *homogamy*, top panel), husbands have more education than their wives (*hypergamy*, H > W; middle panel), and husbands have less education than their wives (*hypogamy*, W > H; bottom panel).[9] These shares are plotted across marriage cohorts for SSA as a whole and by region. The dominant pattern across cohorts is one in which the highest share of couples is homogamous—hence the main focus here—followed by hypergamous and then by hypogamous unions, in line with Lopus and Frye's (2020) study of intramarital status differences across Africa's educational expansion. Focusing on SSA as a whole, Figure 1 shows declining shares of homogamous couples and slightly increasing shares of hypergamous and hypogamous (the latter of which is still very low, except in Southern SSA) couples in more recent marriage cohorts. Subregional disparities are stark. For instance, in Western and Central Africa, where educational access tends to be lower than in other subregions, most countries have undergone significant increases in the prevalence of educational hypergamy; this finding is consistent with the widening of the educational gender gap that has accompanied Africa's transition from low to middle levels of educational expansion, as shown by Lopus and Frye (2020).

Delving into the specifics of homogamous couples, Figure 2 plots the share of homogamous unions by educational level, for SSA as a whole (top panel) and by location of residence (bottom panel). The top panel points toward declining shares of homogamous couples with no education and increasing shares of homogamous couples with secondary or higher education. Given that the share of couples with both partners having primary education has remained virtually unchanged, this graph suggests that homogamy in SSA has been mostly driven by changes at the bottom and the top of the educational distribution. The steep decline in couples with no education (online appendix, Figure A2, top panel) more than offsets the weaker increase in couples with higher education (Figure A2, bottom panel), producing a downward overall trend in the share of homogamous couples (i.e., for all levels of education combined).

Estimates by location of residence (Figure 2, bottom panel) show vastly different trends between urban and rural areas. Although most of the decline in the share of homogamous couples with partners having no education is occurring in rural areas, increasing shares of couples with partners having secondary or higher education are driven primarily by urban areas. Indeed, these areas underwent rapid industrialization earlier, thereby creating economic growth and job opportunities and drawing people to cities in tandem with a faster expansion of higher education and access to other public services.

Although the share of homogamous unions is a straightforward measure of educational homogamy (Mare 1991), trends in educational assortative mating based on this variable should be interpreted with caution (Schwartz and Mare 2005; Torche 2010). In cross-tabulations of wives' and husbands' educational levels, variation in observed proportions in different categories of the joint distribution of partners' education is the outcome of two forces: variation in the marginal distributions (e.g., declines in shares

[9] For a snapshot of the types of unions prevailing in SSA in the earliest (panel a) and latest (panel b) marriage cohorts in *each* country, alongside their changes (panel c), see Figure A1 (online appendix) and the related discussion.

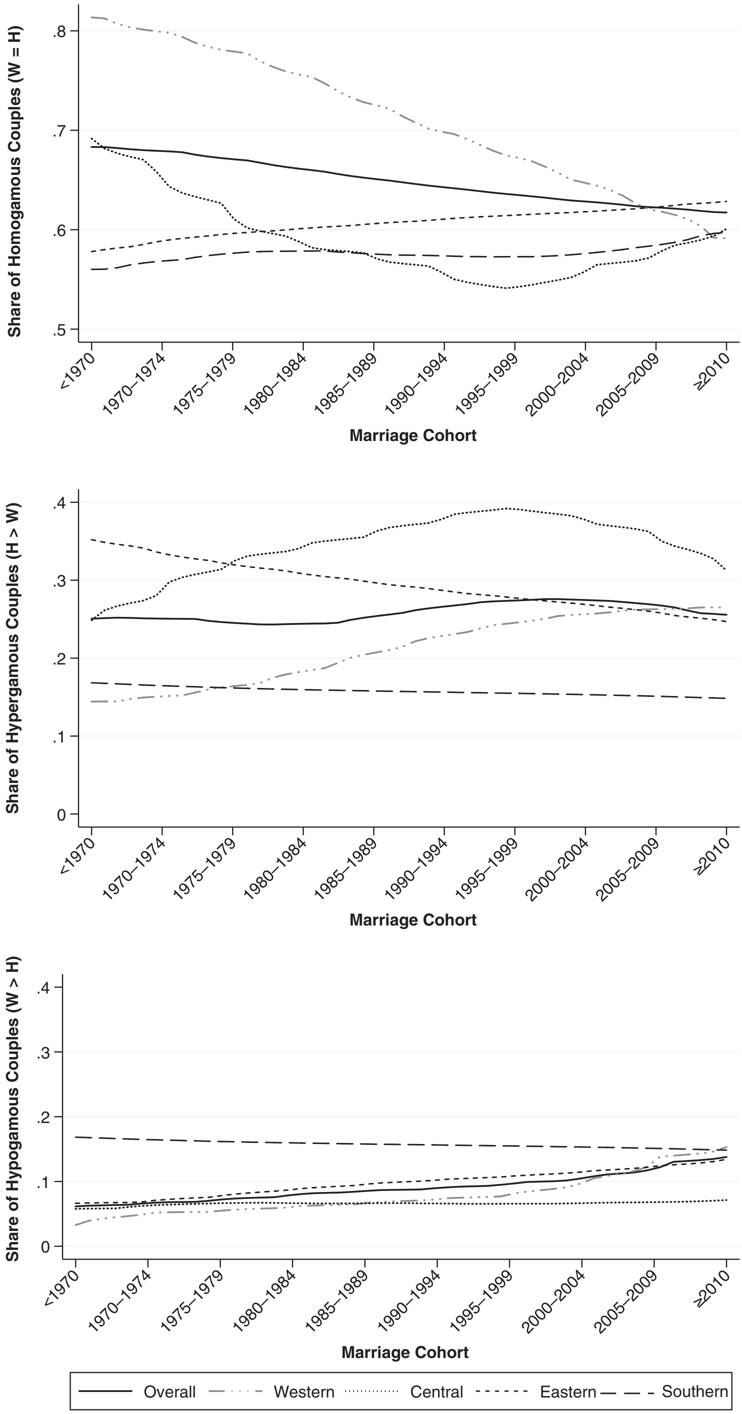

Fig. 1 Share of educationally *homogamous* (top panel, W=H) and *heterogamous* (*hypergamous*, middle panel, H>W; *hypogamous*, bottom panel, W>H) couples by region. The first panel is on a different scale starting from 0.5 because the vast majority of couples are homogamous. *Source*: Demographic and Health Surveys.

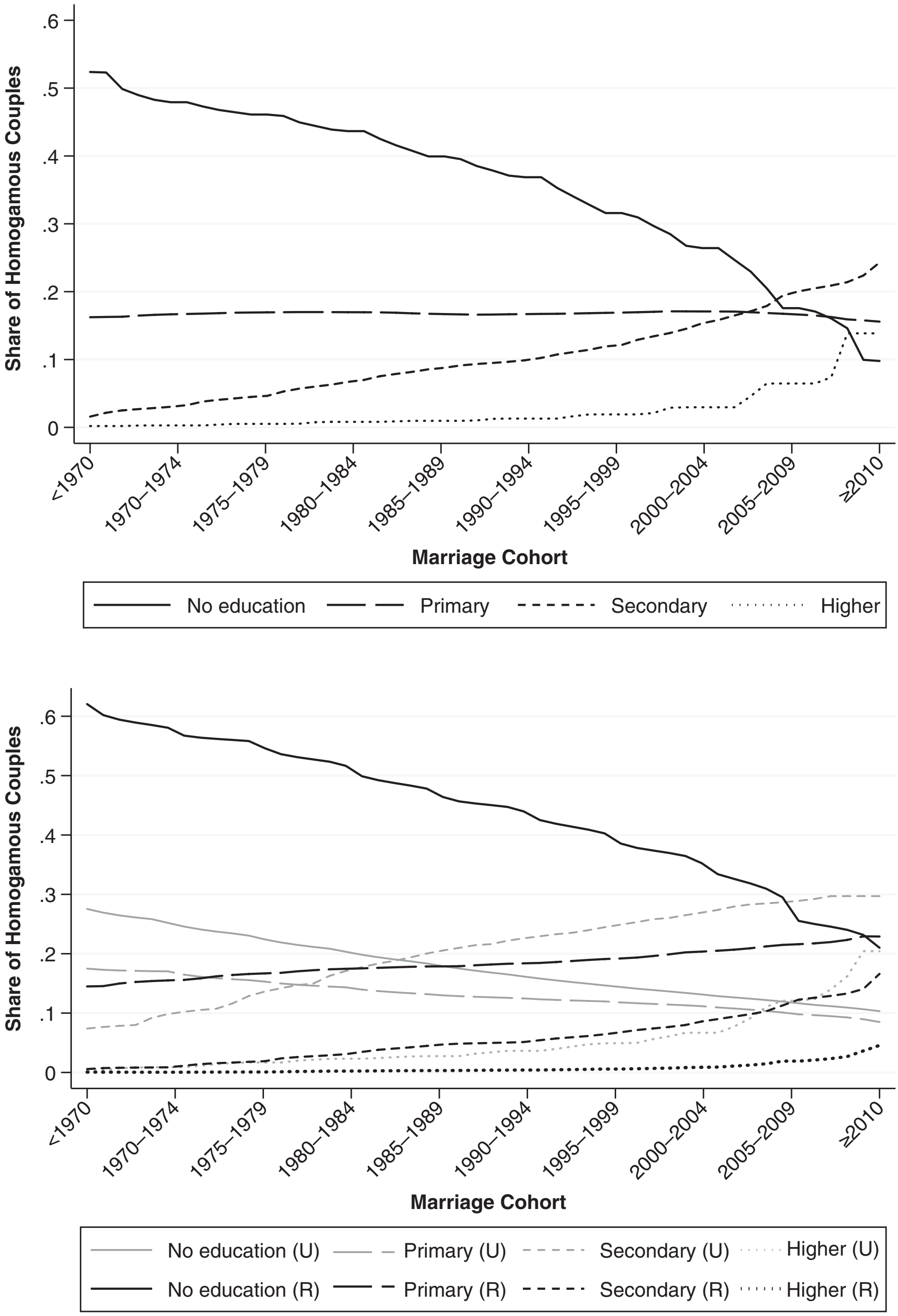

Fig. 2 Share of homogamous couples by educational level, for sub-Saharan Africa as a whole (top panel) and by household location of residence (bottom panel). U=urban; R=rural. *Source*: Demographic and Health Surveys.

of individuals with no education over time) and variation in the association between partners' educational attainment net of marginal distributions. For instance, the share of homogamous unions may simply be higher in the earliest marriage cohort because of the high concentration of husbands and wives in the "no education" category. In what follows, I address this criticism and explore whether the strength of the association between husbands' and wives' education has increased, or whether this trend is altered after shifts in the marginal distributions of husbands' and wives' education are controlled for.

Educational Assortative Mating

Marital Sorting Parameters

To properly measure educational assortative mating, I follow an approach similar to that of Eika et al. (2019) and Greenwood et al. (2014) based on contingency tables and marital sorting parameters. For every given marriage cohort, each cell in the contingency table gives the *observed* fraction of partnered households that occurs in a specific educational pairing. Educational assortative mating is defined as men and women with the same level of education marrying more frequently than what would be expected under a marriage pattern that is random with respect to education. Marital sorting (Eq. (1)) between education levels e_h and e_w is then the observed probability that a husband with education level e_h is married to a wife with education level e_w, relative to the probability under random mating with respect to education:

$$s(e_h, e_w) = \frac{\Pr(E_h = e_h,\ E_w = e_w)}{\Pr(E_h = e_h)\Pr(E_w = e_w)}, \tag{1}$$

where E_h and E_w denote the education level of the husband and wife, respectively. Assortative mating occurs when the marital sorting parameter $s(e_{h,} e_w)$ is larger than 1 when i is equal to j. In a contingency table, the diagonal of the contingency table describes the matches that occur when husbands and wives have the same educational level. This observed pattern of mating can be compared with the one that would occur if husbands and wives matched randomly.[10] Contingency tables by marriage cohort for SSA as a whole, reported in Table 3, show massive changes in educational distributions. For instance, 71.3% of women were in the "no education" category in the earliest marriage cohort, compared with 16.1% in the latest cohort (the analogous change for men was 57.6% to 14.7%).

Taking the sum along the diagonals for each of these two types of matches, actual and random, and computing the ratio of these two sums, yields $s(e_{h,} e_w)$. The estimated marital sorting parameters—that is, the relative sum of the diagonals—by marriage cohort are plotted in Figure 3 by subregion (top panel) and location of residence (bottom panel). The exact values of s are provided in Table A4 in the online appendix.

Figure 3 provides evidence of educational assortative mating in SSA: the ratios are larger than 1, implying that the number of matches between husbands and wives

[10] Proportions under random mating are the expected frequencies under the independence assumption (i.e., the product of the marginal distributions for husbands and wives).

Table 3 Contingency tables (observed and random mating) by marriage cohort, sub-Saharan Africa as a whole

	No Education (W)		Primary (W)		Secondary (W)		Higher (W)	
	Assortative	Random	Assortative	Random	Assortative	Random	Assortative	Random
<1970								
No education (H)	**.524**	**.411**	.051	.148	.001	.016	.000	.001
Primary (H)	.161	.231	**.157**	**.083**	.005	.009	.000	.001
Secondary (H)	.026	.062	.046	.023	**.016**	**.002**	.000	.000
Higher (H)	.003	.009	.003	.003	.005	.000	**.002**	**.000**
Marginal	.713		.257		.027		.002	
1970–1974								
No education (H)	**.479**	**.355**	.053	.151	.003	.027	.000	.002
Primary (H)	.158	.220	**.166**	**.094**	.009	.017	.000	.001
Secondary (H)	.023	.075	.059	.032	**.031**	**.006**	**.001**	**.000**
Higher (H)	.003	.012	.005	.005	.008	.001	.003	.000
Marginal	.663		.283		.051		.004	
1975–1979								
No education (H)	**.461**	**.323**	.049	.148	.004	.039	.000	.004
Primary (H)	.140	.204	**.170**	**.094**	.015	.025	.000	.002
Secondary (H)	.026	.087	.065	.040	**.047**	**.011**	.001	.001
Higher (H)	.002	.014	.005	.006	.011	.002	**.005**	**.000**
Marginal	.628		.288		.076		.007	
1980–1984								
No education (H)	**.437**	**.287**	.049	.145	.006	.054	.000	.005
Primary (H)	.114	.178	**.170**	**.090**	.021	.033	.000	.003
Secondary (H)	.030	.099	.070	.050	**.067**	**.019**	.002	.002
Higher (H)	.003	.020	.006	.010	.016	.004	**.008**	**.000**
Marginal	.584		.296		.109		.011	
1985–1989								
No education (H)	**.399**	**.246**	.049	.138	.006	.064	.000	.006
Primary (H)	.104	.162	**.169**	**.091**	.027	.043	.000	.004
Secondary (H)	.034	.110	.078	.062	**.088**	**.029**	.003	.003
Higher (H)	.004	.023	.008	.013	.022	.006	**.010**	**.001**
Marginal	.541		.304		.142		.014	

Table 3 (continued)

	No Education (W)		Primary (W)		Secondary (W)		Higher (W)	
	Assortative	Random	Assortative	Random	Assortative	Random	Assortative	Random
1990–1994								
No education (H)	**.369**	**.219**	.048	.130	.007	.067	.000	.008
Primary (H)	.104	.152	**.163**	**.090**	.026	.047	.001	.006
Secondary (H)	.038	.118	.086	.070	**.099**	**.036**	.005	.004
Higher (H)	.004	.027	.009	.016	.026	.008	**.013**	**.001**
Marginal	.516		.307		.159		.019	
1995–1999								
No education (H)	**.316**	**.171**	.050	.121	.007	.072	.000	.010
Primary (H)	.099	.139	**.172**	**.098**	.032	.058	.001	.008
Secondary (H)	.039	.119	.093	.084	**.122**	**.050**	.007	.007
Higher (H)	.005	.029	.009	.021	.032	.012	**.019**	**.002**
Marginal	.458		.323		.192		.027	
2000–2004								
No education (H)	**.264**	**.126**	.045	.104	.010	.077	.000	.013
Primary (H)	.086	.117	**.171**	**.096**	.038	.071	.001	.012
Secondary (H)	.038	.119	.100	.098	**.154**	**.073**	.010	.012
Higher (H)	.005	.032	.009	.027	.039	.020	**.030**	**.003**
Marginal	.393		.325		.241		.041	
2005–2009								
No education (H)	**.176**	**.065**	.043	.073	.013	.074	.001	.021
Primary (H)	.065	.079	**.170**	**.089**	.045	.090	.003	.025
Secondary (H)	.033	.097	.094	.110	**.200**	**.110**	.021	.031
Higher (H)	.005	.038	.008	.043	.059	.043	**.065**	**.012**
Marginal	.278		.316		.317		.090	
≥2010								
No education (H)	**.098**	**.024**	.031	.037	.016	.058	.002	.028
Primary (H)	.037	.036	**.128**	**.056**	.050	.087	.006	.043
Secondary (H)	.023	.064	.083	.100	**.243**	**.156**	.048	.077
Higher (H)	.003	.038	.010	.060	.085	.093	**.139**	**.046**
Marginal	.161		.252		.394		.194	

Notes: W=wife; H=husband. Proportions under random mating are the expected frequencies under the independence assumption (i.e., the product of the marginal distributions for husbands and wives). Figures in bold are the shares of homogamous couples, both under observed and random mating.

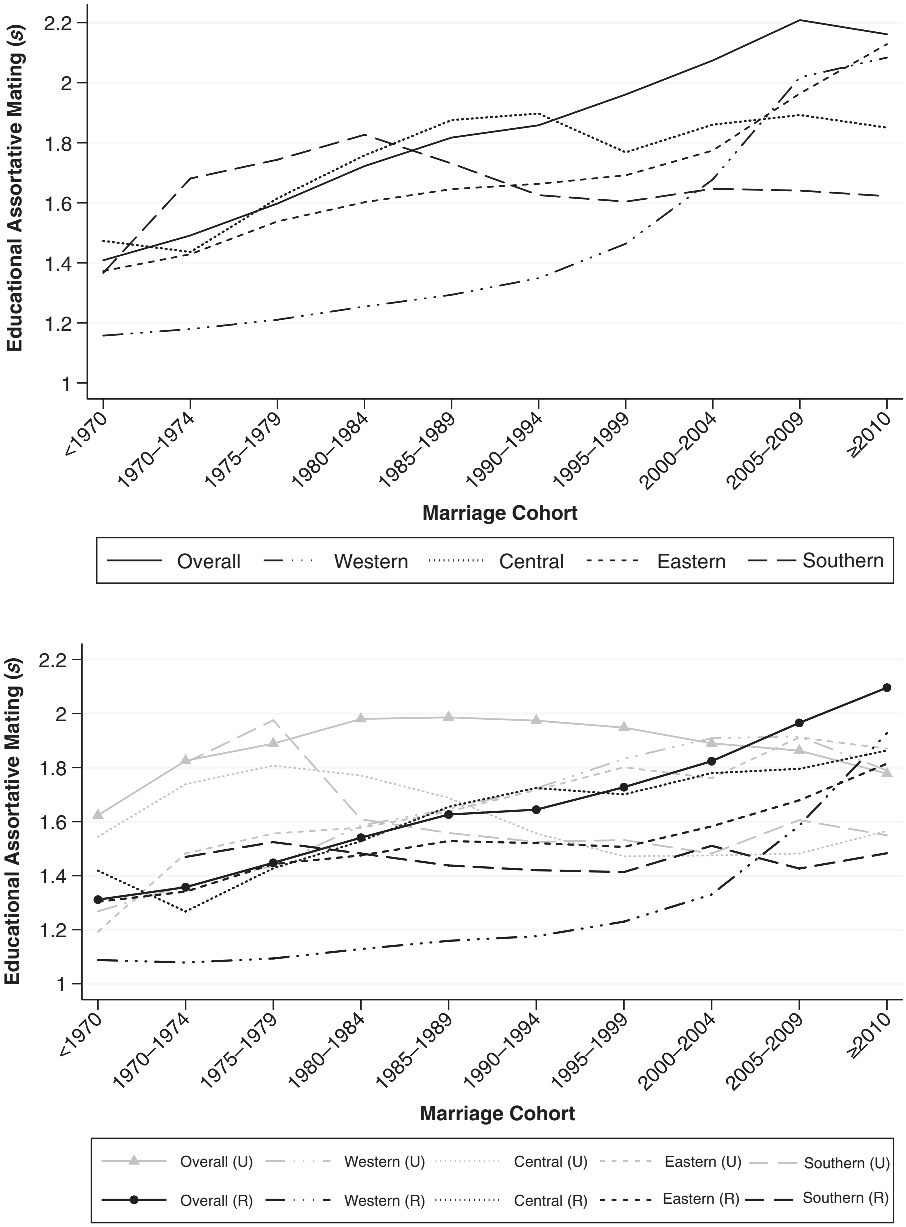

Fig. 3 Educational assortative mating (s parameter), by region of sub-Saharan Africa (top panel) and household location of residence (bottom panel). U = urban; R = rural. *Source*: Demographic and Health Surveys.

with identical education is larger than what would occur if matching were random. Sorting parameters are higher for the latest marriage cohort relative to the earliest one (top panel), both for SSA as a whole (solid line) and for each subregion individually, suggesting that educational assortative mating has increased over subsequent cohorts. However, although *s* increased monotonically from 1.4 to approximately 2 for SSA as

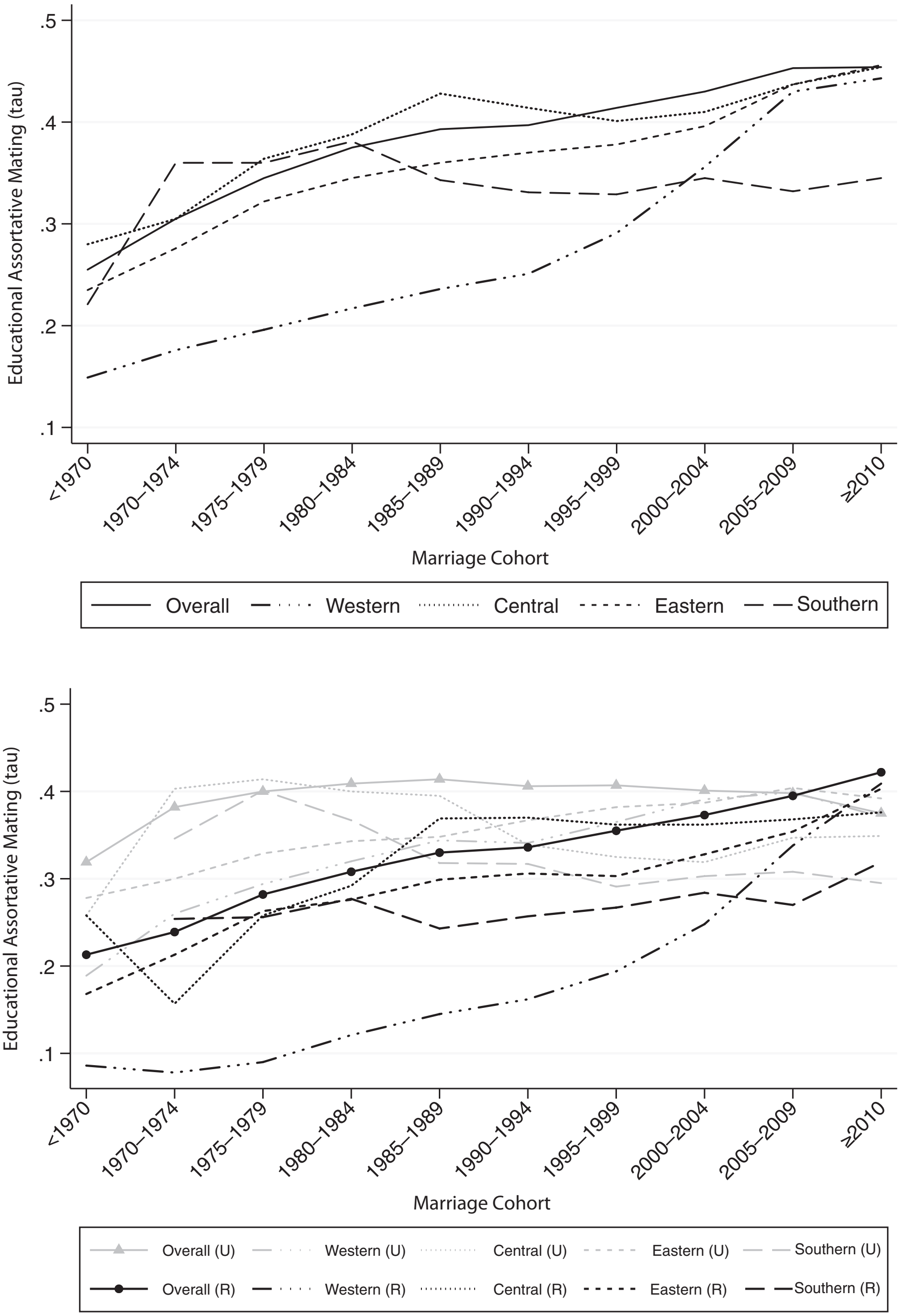

Fig. 4 Educational assortative mating (tau parameter), by region of sub-Saharan Africa (top panel) and household location of residence (bottom panel). U=urban; R=rural. *Source*: Demographic and Health Surveys.

a whole—indicating that assortative matches occurred twice as often as they would have at random in the latest marriage cohort—subregional trends are heterogeneous. Mating in early cohorts was lower in Western Africa, yet this subregion experienced the steepest increases in *s* followed in turn by Eastern and Central Africa. Conversely, Southern Africa experienced mild increases across early cohorts, followed by a downward trend thereafter. Steep upward trends in Western Africa and relatively flat or downward trends in Southern Africa are confirmed in Figure A3 (online appendix), which tests the robustness of the findings to alternative age ranges of women. The Southern African trends that emerge from this analysis are unique within SSA and consistent with the specificities of the subregion discussed earlier. Educational assortative mating is also evident at each level of education ($s > 1$) yet increasing for those with no education and decreasing for those with secondary or higher education (Figure A4, online appendix).

The bottom panel of Figure 3 provides estimates of *s* by location of residence and shows evidence of educational assortative mating in both urban and rural areas. Although assortative mating in early cohorts was higher in urban areas, most of the increase in assortative mating across cohorts is accounted for by changes in rural areas, where *s* increased monotonically from 1.3 to about 2.1. Conversely, overall trends in urban areas are fairly flat. Southern Africa is the only subregion where *s* did not follow an upward trend in either urban or rural areas, or where the rural-urban divide in assortative mating patterns is less stark. As such, these figures provide some indication of the applicability of the status attainment hypothesis in rural areas and the inverted U-curve framework in urban areas, where greater geographical mobility, educational expansion, cross-cultural exchange, and mass communication contribute to gradually spreading the logic of romantic love.

Given previous literature suggesting that conclusions about changes in assortative mating are dependent on the methodology used (Blossfeld 2009; Schwartz 2013), Figure 4 displays results using an alternative measure: Kendall's tau rank correlation between husband's and wife's highest level attained in each five-year marriage cohort.[11] Despite minor discrepancies, this analysis confirms my main findings of a steep increase in assortative mating in Western Africa, the uniqueness of Southern Africa as the only subregion where assortative mating has not increased, and the pivotal role of rural areas in driving assortative mating patterns.

Inequality Implications of Educational Assortative Mating

Trends in Wealth Dispersion

I begin the inequality analysis by exploring how between-household wealth inequality has evolved across marriage cohorts. For this part of the analysis, the number of

[11] Kendall's tau is a measure of rank correlation, given by the difference between the number of concordant and discordant pairs of couples relative to the total number of pairs of couples. The Kendall correlation ranges from −1 to 1, and it is closer to 1 the more similar the ranks of the spouses are in the marginal distribution of education of husbands and wives.

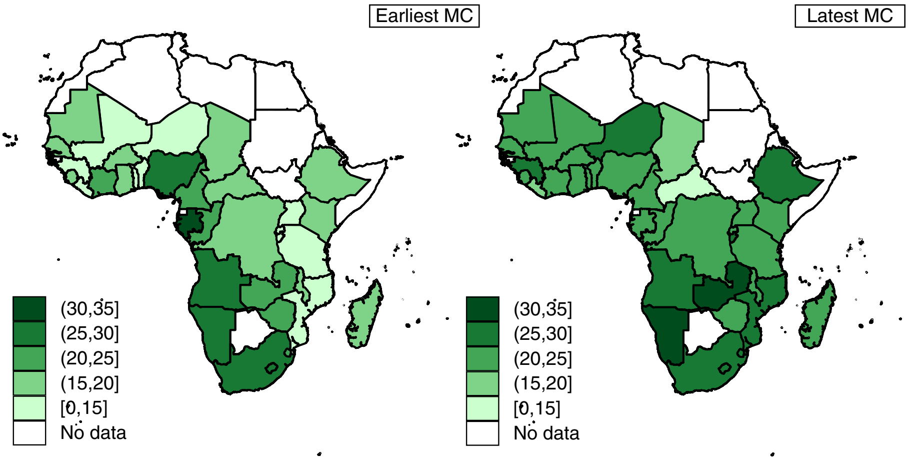

Fig. 5 Wealth dispersion (standard deviation in IWI) for the earliest (left panel) and latest (right panel) marriage cohort, by sub-Saharan African country. MC = marriage cohort. *Source*: Demographic and Health Surveys and Global Data Lab.

marriage cohorts is reduced from 10 (five-year) to five (10-year).[12] Because the IWI is measured on a 0–100 scale in every country and is comparable both across countries and over time, I measure inequality through the most straightforward measure of dispersion: the variance, or standard deviation. Specifically, I compute the variance of the IWI for every country-cohort combination. Measures of inequality based on asset indices have been employed by, for example, Ward (2014) for China and Wittenberg and Leibbrandt (2017) for South Africa.

Figure 5 provides a geographical overview of wealth dispersion (in standard deviations) by country and marriage cohort. I provide estimates for the earliest (left) and latest (right) cohort available for each country. The map shows that wealth dispersion is on average higher in Southern Africa and has increased across cohorts throughout most of SSA. There are some exceptions to this pattern in countries such as Gabon, Nigeria, and Central African Republic, where wealth dispersion shows a downward trend. Table B1 in the online appendix reports estimates from an ordinary least squares regression of the IWI standard deviation on a categorical variable for marriage cohort. Estimates show that wealth dispersion has been increasing over cohort, mainly driven by rural areas. Compared with the standard deviation in the earliest cohort, that in IWI in the latest cohort for SSA as a whole is five to six units higher (panel a). Although there is a dearth of research on patterns of wealth inequality in SSA, mostly due to the complexities inherent in measuring social and economic performance in this region (Harttgen et al. 2013; Klasen and Blades 2013), my findings of persistently high inequality are consistent with figures from the African Development Bank and from

[12] Households/couples in more recent cohorts have had less time to accumulate assets/wealth. Widening the horizon to 10 years likely yields a more balanced picture.

the United Nations Development Programme (Shimeles and Nabassaga 2018). Other recent studies have also suggested that inequality trends across countries in Africa have not leveled off (Bigsten 2018).

Counterfactual Analysis

To assess implications of educational assortative mating for household wealth inequality, I build on the previous accounting exercise and follow a simple and novel approach that well suits micro-level data. Specifically, I model the cohort-specific variance (*VAR*) of wealth:

$$VAR[W]_l = \left[E(W^2)_l - \left(E(W)\right)_l^2 \right]. \tag{2}$$

I use regression analysis to estimate counterfactual expectations, reweighting the betas using either observed (assortative) or random (counterfactual) proportions from the contingency tables presented earlier. For every cohort *l*, each component of the variance in Eq. (2) (i.e., the second moment and the squared mean) is regressed onto a series of dummy variables for whether the couple is homogamous, with both partners having no education (reference category); homogamous, with both partners having primary education, secondary education, or higher education; or not homogamous, with partners having discordant levels of education (i.e., the off-diagonals). After obtaining the betas, expectations are computed by multiplying the betas by either the observed or the counterfactual proportions. This way, for each cohort, I estimate a variance computed under observed proportions and a variance computed under counterfactual proportions. With these quantities, I compute the share of cohort-specific inequality attributable to educational assortative mating as follows:

$$\%ineq_l = \frac{VAR[W]_{l,\ observed} - VAR[W]_{l,\ counterfactual}}{VAR[W]_{l,\ observed}}, \tag{3}$$

where $VAR[W]_{l,\ counterfactual} = (VAR|VAR_{mating=random})$.

How would wealth inequality change if random rather than assortative mating were imposed in each marriage cohort (within-cohort perspective)? Figure 6 reports the percentage of the cohort-specific inequality attributable to educational assortative mating (with related variances shown in Table B2, online appendix). Estimates for SSA as a whole show that the share of inequality attributable to assortative mating is low, reaching at most 3.7% in the latest cohort. Further disaggregation unravels interesting heterogeneity, suggesting that only in urban areas does assortative mating explain a share of the cohort-specific inequality, although this share is low. Heterogeneity by subregion also shows that the low shares accounted for by assortative mating are driven primarily by Western Africa, likely confirming the hypothesis of low correlation between women's education and income in this subregion. Conversely, in Eastern Africa, assortative mating accounts for up to 12% of the cohort-specific inequality in wealth, followed in turn by Southern Africa (at most 10% to 11%) and Central Africa (at most 7%). High shares in Eastern Africa are aligned with the urban-rural

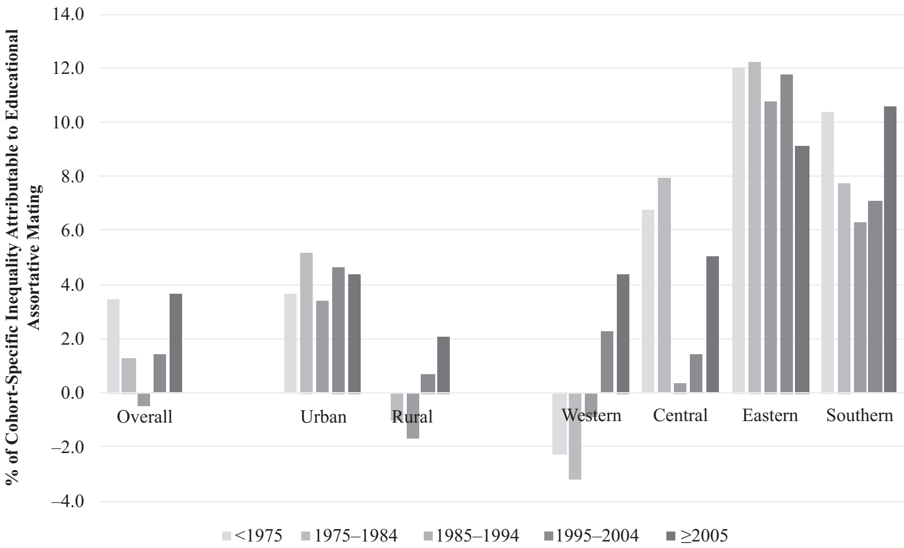

Fig. 6 Percentage of cohort-specific inequality attributable to educational assortative mating, by location of residence and region of sub-Saharan Africa. Related estimates with variance components in Table B2 (online appendix). *Source*: Demographic and Health Surveys and Global Data Lab.

differences identified in panel a of Figure 6, in that (as of 2014) Eastern Africa has the lowest share of urban population (25%, vs. 44% in Western and Central Africa, and 61% in Southern Africa) but exhibits the highest urbanization rate within SSA, with an average annual increase in the urban population of 4.5% (UN-DESA 2015). Overall, these findings support the idea that educational assortative mating accounts for a nonnegligible share of the cohort-specific inequality in wealth. These are not sizable coefficients, yet they point to a link between educational assortative mating and household wealth inequality that had not been previously identified.

Can changes in assortative mating over time explain time trends—mostly, the increase—in wealth inequality (across-cohort perspective)? To answer this question, I examine what would happen to wealth inequality if couples from the latest cohort matched as those in the earliest cohorts did. Methodologically, this entails recomputing the variance in the latest cohort (≥2005), applying the observed proportions from each earlier cohort. Because changes in observed proportions are affected by shifts in marginal distributions, I use the Sinkhorn-Knopp algorithm (Sinkhorn and Knopp 1967)—an iterative procedure outlined in Mosteller (1968) and adopted by Greenwood et al. (2014)—to construct standardized contingency tables such that two contingency tables have the same marginal distributions associated with the rows and columns.[13] After imposing the marginal distributions of the latest cohort to all preceding ones, I iteratively obtain the new observed proportions—those purged of compo-

[13] The basic idea is to fix the marginal distributions of a contingency table and rework the internal cells such that the "new" marginal distributions are respected.

Table 4 Variance in wealth (IWI) for the latest marriage cohort (≥2005) under different counterfactual distributions

a.	Overall				Urban				Rural			
			Fixed MD (latest)				Fixed MD (latest)				Fixed MD (latest)	
Counterfactual Distribution	Variance Latest MC	% Change	Variance Latest MC	% Change	Variance Latest MC	% Change	Variance Latest MC	% Change	Variance Latest MC	% Change	Variance Latest MC	% Change
≥2005	717.4	—	717.4	—	474.9	—	474.9	—	356.3	—	356.3	—
1995–2004	656.4	−8.5	719.1	0.2	483.4	1.8	474.8	0.0	330.0	−7.4	356.3	0.0
1985–1994	624.6	−12.9	717.6	0.0	490.6	3.3	475.1	0.0	321.0	−9.9	355.6	−0.2
1975–1984	598.1	−16.6	720.8	0.5	500.7	5.4	475.5	0.1	311.9	−12.4	357.0	0.2
<1975	578.4	−19.4	722.5	0.7	506.8	6.7	476.9	0.4	307.8	−13.6	353.6	−0.8

b.	Western				Central				Eastern				Southern			
			Fixed MD (latest)				Fixed MD (latest)				Fixed MD (latest)				Fixed MD (latest)	
Counterfactual Distribution	Variance Latest MC	% Change	Variance Latest MC	% Change	Variance latest MC	% Change	Variance Latest MC	% Change	Variance Latest MC	% Change	Variance Latest MC	% Change	Variance Latest MC	% Change	Variance Latest MC	% Change
≥2005	594.3	—	594.3	—	843.6	—	843.6	—	653.5	—	653.5	—	776.7	—	776.7	—
1995–2004	580.6	−2.3	596.5	0.4	780.7	−7.5	847.9	0.5	562.7	−13.9	655.3	0.3	731.6	−5.8	773.3	−0.4
1985–1994	559.9	−5.8	595.4	0.2	743.0	−11.9	846.4	0.3	534.9	−18.1	655.2	0.3	709.5	−8.7	776.4	0.0
1975–1984	539.2	−9.3	596.7	0.4	670.1	−20.6	851.5	0.9	514.0	−21.3	662.9	1.4	688.9	−11.3	776.8	0.0
<1975	521.5	−12.3	594.7	0.1	562.8	−33.3	817.2	−3.1	497.4	−23.9	664.1	1.6	641.9	−17.4	779.2	0.3

Notes: MD = marginal distributions. MC = marriage cohort.

sitional factors—and reestimate the corresponding variances (i.e., the variance in the latest cohort using the "corrected" observed proportions from the preceding cohorts).

Table 4 provides results from the simulation exercise. The first two columns in each subpanel rely on *uncorrected* (i.e., affected by differences in marginal distributions) observed proportions, and the last two columns rely on *corrected* (i.e., independent of differences in marginal distributions) observed proportions obtained through the iterative procedure. Focusing on unadjusted estimates for SSA as a whole (panel A), the first two columns suggest that wealth inequality in the latest cohort (≥2005) would be about 19.4% lower if the observed pattern of mating from the earliest cohort (<1975) were imposed, with trends very much driven by rural areas. The opposite trend is observed in urban areas, where wealth inequality would actually be 7% larger if the observed pattern of mating from the earliest cohort were imposed. However, relying on adjusted estimates, I observe that changes in assortative mating hardly move time trends in wealth inequality, irrespective of location of residence (panel a) and subregion (panel b). Ultimately, this exercise suggests that changes in educational distributions, rather than changes in assortative mating itself, are mainly responsible for explaining time trends in wealth inequality.

Differently from income and consumption expenditure data, IWIs and asset indices in general are not adjusted for household size or other demographic characteristics of the household. The reason is that the assets used for constructing these indices consist almost exclusively of household public goods, and housing characteristics, access to services, and durables (e.g., TV, refrigerator, clock, or car) tend to benefit all household members (Smits and Steendijk 2015). In any case, to provide a proxy for "crowding" and evaluate whether household characteristics explain any variability in the IWI, I reestimate IWI variances controlling for some household characteristics: the total number of household members, a dummy variable for whether the partner lives in the household or elsewhere, polygyny, the total number of sons living at home, and the total number of daughters living at home. Table B3 (online appendix) replicates Table B2 and shows that estimated variances are almost identical to those provided in the text, confirming findings from the literature (Filmer and Scott 2012; Sahn and Stifel 2000). This finding suggests I am not missing significant household-related variability in the estimation of variances.

Last, I conduct these analyses by country selecting the three countries where inequality has increased the most between the earliest and latest cohort—Guinea, Rwanda, and Uganda—and the three countries where inequality has increased the least (or has decreased)—Central African Republic, Congo, and Zimbabwe. Results (available upon request) show that even in these extreme cases, changes in assortative mating explain trends in wealth inequality to a negligible extent.

Discussion and Conclusions

This study provides a comprehensive analysis of educational assortative mating across 39 countries in SSA, a region of the world that has experienced rapid socioeconomic and demographic change yet has been largely neglected in the assortative mating literature. Adopting a marriage-cohort temporal perspective and computing measures that net out the confounding role of shifting educational distributions, I found that assortative mating in SSA has followed rather different trajectories both by subregion and by household location of residence. Despite evidence of educational assortative mating throughout SSA ($s > 1$), assortative mating has increased across cohorts in Western, Central, and Eastern Africa, mainly driven by low-educated individuals increasingly sorting into homogenous marriages. By contrast, it has flattened out and somewhat decreased in Southern Africa, mainly driven by declines among individuals with higher education. Heterogeneity is also evident in levels and relative growth: assortative mating was lower in Western Africa for early cohorts, yet the subregion has witnessed the steepest increase in the sorting parameter. Additionally, I found that increases in assortative mating have been largely driven by rural areas, where the trend for SSA seems to conform to the status attainment hypothesis. Assortative mating in urban areas has shown a mild increase followed by an incipient decline, consistent with the inverted U-curve framework and the increasing applicability of the general openness hypothesis. Overall, the documented heterogeneity—and, foremost, the diverging trends between Western and Southern Africa—is consistent with the economic (e.g., urbanization), sociodemographic (e.g., changes in families), and cultural specificities (e.g., patriarchal norms) of each subregion.

In the second part of the analysis, I explored implications of educational assortative mating for household wealth inequality measured through the International Wealth Index. Using counterfactual simulations both within and across cohorts, I found that assortative mating accounts for a nonnegligible share of the cohort-specific inequality in household wealth, which ranges subregionally from 3% to 12% and is wholly driven by urban areas. Assortative mating accounts for a higher share of wealth inequality in Southern Africa (the most urbanized subregion) and Eastern Africa (the subregion that has experienced the highest rates of urbanization). Provided that a link exists between trends in assortative mating and trends in inequality, the steepest increases in both mating and wealth inequality in rural areas would have led to the expectation that the share of inequality attributable to mating would be higher in these areas. Empirical evidence contradicts this expectation, and cross-cohort simulations showed that changes in assortative mating over time barely move the time trends in wealth inequality irrespective of household location of residence. This finding echoes the solid body of evidence that assortative mating plays a small role in explaining trends in household income inequality in high-income societies (Breen and Salazar 2011) and may suggest that the inequality contribution from the increase in mating among the low-educated is offset by the equalizing effect from the decline in mating among the highly educated. Relatedly, increases over time in the returns to education might generate a rise in household wealth inequality, but these price effects may be mitigated by increases in college attendance and completion among women (Eika et al. 2019). At any rate, this result encourages a consideration of factors not considered in the present analysis, such as women's labor supply decisions and the nature of women's work (Gonalons-Pons and Schwartz 2017; Greenwood et al. 2014).

To the best of my knowledge, this is the first large-scale study focusing on trends, determinants, and implications of assortative mating for wealth inequality in SSA. As such, it suffers from several limitations that set the stage for future research. First, the data and measures present limitations that relate to the nature and sampling frame of DHS data. Because the DHS provide data only on the year of first union and include information on the education of the current partner (not any previous one), the sample was limited to couples in which women had been married only once, whereas no restrictions were imposed on men because of the lack of information on their marriage order. This approach follows the prior literature (e.g., Casterline et al. 1986) and aligns with the claim that a focus on first marriages is what really matters for understanding patterns of assortative mating (Schwartz and Mare 2012), but there is still room for improvement. However, at least for now, no other data set permits an analysis of assortative mating patterns in SSA with analogous coverage.

Methodologically, this study—like many other studies of assortative mating using cross-sectional data—takes marital matches as the starting point and attempts to explain trends and variation in assortative mating through spouses' individual characteristics. As such, the analysis excludes all those individuals who are still single at the time of the interview. This is likely to create issues in societies with increasing rates of singlehood at the beginning of the life course. In the SSA context, this is less problematic because getting married remains the largely predominant social norm for both men and women, and virtually everyone eventually enters a union (Tabutin and Schoumaker 2004; see also data on marriage rates with DHS in Table A1, online appendix). Given the increasing proportion of never-married individuals in Southern Africa, this is the only subregion in which this omission is likely to introduce some bias. Another related issue is that educational status also influences entry into marriage and that rates of never marrying might vary systematically across educational expansion, a finding for which Lopus and Frye (2020) found support only among higher-educated women. Another methodological issue is tied to the scale of the analysis. Because assortative mating is ultimately determined by the availability of partners and potential matches, its functioning is more properly understood at a finer level of analysis, such as districts or cities. Given that this study sought to provide an overview of patterns for the region as a whole while allowing for heterogeneity by subregion and location of residence, this issue ultimately boils down to the usual trade-off between breadth of analysis and level of detail.

Last, the wealth analysis presents limitations that pertain to the methodology and the type of measure used—the only available measure for most LMICs. Methodologically, the approach I used may lead to measurement issues hidden in "full" measures of inequality that combine information about the relative wealth of various education groups and the size of different education categories. As a variable, the IWI has the advantage of easy reproducibility, given that it builds on the same set of assets across countries. At the same time, its universality may be a drawback: finding a small set of assets common to such a large number of surveys requires discarding a lot of asset information gathered about any given household. Despite not being dismissive of asset indices, Harttgen et al. (2013) claimed that asset indices overstate the pace of poverty reduction as there is evidence of *asset drift*—that is, an accumulation of assets over time (e.g., due to shifting preferences or assets becoming relatively cheaper), with households accumulating assets without getting any less poor. Moreover, there is skepticism on whether asset indices may proxy for measures of income. In line with Sahn and Stifel (2000) and Filmer and Scott (2012), Smits and Steendijk (2015) claimed that asset indices are indicators of longer-term, more stable aspects of household's economic status rather than monetary or expenditure-based welfare measures. Most importantly, asset indices are measured at the household level and thus do not provide information on the wealth distribution by gender. This might imply that if wealth is concentrated mostly among men, assortative mating would do little to shape wealth inequality. As such, it is not clear (yet) whether it makes sense to study assortative mating patterns in relation to analyses of inequality based on asset measures. The high degree of consistency between my results and research on assortative mating and inequality in high-income societies indicates some degree of reliability of the findings. Yet these findings are certainly not indisputable, and further advances in the field will allow assessments of their robustness. ■

Acknowledgments The author is grateful for useful comments from seminar participants at the 2018 American Sociological Association and the 2019 Population Association of America. The author thanks Francesco C. Billari, Frank F. Furstenberg, Hans-Peter Kohler, Jere R. Behrman, Pilar Goñalons-Pons, Nikkil Sudharsanan, Jeremy Greenwood, Julia A. Behrman, Christiaan Monden, and four anonymous referees for helpful comments and suggestions. The author is also grateful to Jeroen Smits and the Global Data Lab for providing access to the International Wealth Index (IWI) data. Financial support for this article came from the Global Family Change (GFC) Project (http://web.sas.upenn.edu/gfc), a collaboration between the University of Pennsylvania, the University of Oxford (Nuffield College), Bocconi University, and the Centro de Estudios Demogràficos (CED) at the Universitat Autònoma de Barcelona. Funding for the GFC Project is provided through National Science Foundation Grant 1729185 (PIs: Kohler & Furstenberg), European Research Council (ERC) Grant 694262 (PI: Billari), ERC Grant 681546 (PI: Monden), the Population Studies Center and the University Foundation at the University of Pennsylvania, and the John Fell Fund and Nuffield College at the University of Oxford. The author also acknowledges financial support from the School of Arts at McGill University.

References

Ashraf, N., Field, E., & Lee, J. (2014). Household bargaining and excess fertility: An experimental study in Zambia. *American Economic Review, 104,* 2210–2237.

Beck, U. (1986). *Risikogesellschaft: Auf dem weg in eine andere moderne* [Risk Society: Toward a new modernity]. Frankfurt, Germany: Suhrkamp.

Behrman, J. A. (2019). Contextual declines in educational hypergamy and intimate partner violence. *Social Forces, 97,* 1257–1282.

Bigsten, A. (2018). Determinants of the evolution of inequality in Africa. *Journal of African Economies, 27,* 127–148.

Blau, P. M., & Duncan, O. D. (1967). *The American occupational structure*. New York, NY: Wiley.

Blossfeld, H.-P. (2009). Educational assortative marriage in comparative perspective. *Annual Review of Sociology, 35,* 513–530.

Blossfeld, H.-P., & Timm, A. (2003). *Who marries whom? Educational systems as marriage markets in modern societies.* Dordrecht, the Netherlands: Kluwer Academic Publishers.

Boertien, D., & Permanyer, I. (2019). Educational assortative mating as a determinant of changing household income inequality: A 21-country study. *European Sociological Review, 35,* 522–537.

Bongaarts, J., Mensch, B. S., & Blanc, A. K. (2017). Trends in the age at reproductive transitions in the developing world: The role of education. *Population Studies, 71,* 139–154.

Borkotoky, K., & Gupta, A. K. (2016). Trends and patterns of educational homogamy in India: A marriage cohort analysis. *International Journal of Population Research, 2016,* 8562942. http://doi.org/10.1155/2016/8562942

Breen, R., & Andersen, S. H. (2012). Educational assortative mating and income inequality in Denmark. *Demography, 49,* 867–887.

Breen, R., & Salazar, L. (2010). Has increased women's educational attainment led to greater earnings inequality in the United Kingdom? A multivariate decomposition analysis. *European Sociological Review, 26,* 143–157.

Breen, R., & Salazar, L. (2011). Educational assortative mating and earnings inequality in the United States. *American Journal of Sociology, 117,* 808–843.

Casterline, J. B., Williams, L., & McDonald, P. (1986). The age difference between spouses: Variations among developing countries. *Population Studies, 40,* 353–374.

Cherlin, A. J. (2012). Goode's "World revolution and family patterns": A reconsideration at fifty years. *Population and Development Review, 38,* 577–607.

Clark, S., & Brauner-Otto, S. (2015). Divorce in sub-Saharan Africa: Are unions becoming less stable? *Population and Development Review, 41,* 583–605.

De Hauw, Y., Grow, A., & Van Bavel, J. (2017). The reversed gender gap in education and assortative mating in Europe. *European Journal of Population, 33,* 445–474.

Eika, L., Mogstad, M., & Zafar, B. (2019). Educational assortative mating and household income inequality. *Journal of Political Economy, 127,* 2795–2835.

Esteve, A., García-Román, J., & Permanyer, I. (2012). The gender-gap reversal in education and its effect on union formation: The end of hypergamy? *Population and Development Review, 38,* 535–546.

Esteve, A., & McCaa, R. (2007). Tendencias en homogamia educacional en México y Brasil: 1970–2000 [Trends in educational homogamy in Mexico and Brazil: 1970–2000]. *Latin American Research Review, 42*(2), 56–85.

Esteve, A., McCaa, R., & López, L. Á. (2013). The educational homogamy gap between married and cohabiting couples in Latin America. *Population Research and Policy Review, 32,* 81–102.

Esteve, A., Schwartz, C. R., van Bavel, J., Permanyer, I., Klesment, M., & Garcia, J. (2016). The end of hypergamy: Global trends and implications. *Population and Development Review, 42,* 615–625.

Fenske, J. (2015). African polygamy: Past and present. *Journal of Development Economics, 117,* 58–73.

Filmer, D., & Pritchett, L. (1999). The effect of household wealth on educational attainment: Evidence from 35 countries. *Population and Development Review, 25,* 85–120.

Filmer, D., & Pritchett, L. (2001). Estimating wealth effects without expenditure data—Or tears: An application to educational enrollment states of India. *Demography, 38,* 115–132.

Filmer, D., & Scott, K. (2012). Assessing asset indices. *Demography, 49,* 359–392.

Frye, M., & Lopus, S. (2018). From privilege to prevalence: Contextual effects of women's schooling on African marital timing. *Demography, 55,* 2371–2394.

Ganguli, I., Hausmann, R., & Viarengo, M. (2014). Marriage, education and assortative mating in Latin America. *Applied Economics Letters, 21,* 806–811.

Giddens, A. (1991). *Modernity and self-identity*: *Self and society in the late modern age*. Stanford, CA: Stanford University Press.

Gonalons-Pons, P., & Schwartz, C. R. (2017). Trends in economic homogamy: Changes in assortative mating or the division of labor in marriage? *Demography, 54,* 985–1005.

Grant, M. J. (2015). The demographic promise of expanded female education: Trends in the age at first birth in Malawi. *Population and Development Review, 41,* 409–438.

Greenwood, J., Guner, N., Kocharkov, G., & Santos, C. (2014). Marry your like: Assortative mating and income inequality. *American Economic Review: Papers & Proceedings, 104,* 348–353.

Gullickson, A., & Torche, F. (2014). Patterns of racial and educational assortative mating in Brazil. *Demography, 51,* 835–856.

Harttgen, K., Klasen, S., & Vollmer, S. (2013). An African growth miracle? Or: What do asset indices tell us about trends in economic performance? *Review of Income and Wealth, 59*(Suppl. 1), S37–S61.

Hu, A., & Qian, Z. (2015). Educational homogamy and earnings inequality of married couples: Urban China, 1988–2007. *Research in Social Stratification and Mobility, 40,* 1–15.

Huber, S., & Fieder, M. (2011). Educational homogamy lowers the odds of reproductive failure. *PLoS One, 6*, e22330. https://doi.org/10.1371/journal.pone.0022330

Juárez, F., & Gayet, C. (2014). Transitions to adulthood in developing countries. *Annual Review of Sociology, 40,* 521–538.

Kalmijn, M. (1991). Status homogamy in the United States. *American Journal of Sociology, 97,* 496–523.

Kalmijn, M. (1998). Intermarriage and homogamy: Causes, patterns, trends. *Annual Review of Sociology, 24,* 395–421.

Kerr, C. (1983). *The future of industrial societies*. Cambridge, MA: Harvard University Press.

Klasen, S., & Blades, D. (2013). Issues and challenges in measuring national income, wealth, poverty, and inequality in sub-saharan African countries: An introduction. *Review of Income and Wealth, 59*(Suppl. 1), 1–8.

Koski, A., Clark, S., & Nandi, A. (2017). Has child marriage declined in sub-Saharan Africa? An analysis of trends in 31 countries. *Population and Development Review, 43,* 7–29.

Liu, H., & Lu, J. (2006). Measuring the degree of assortative mating. *Economics Letters, 92,* 317–322.

Lloyd, C. B., & National Research Council. (Eds.). (2005). *Growing up global: The changing transitions to adulthood in developing countries*. Washington, DC: National Academies Press.

Lopus, S., & Frye, M. (2020). Intramarital status differences across Africa's educational expansion. *Journal of Marriage and Family, 82,* 733–750.

Mare, R. D. (1991). Five decades of educational assortative mating. *American Sociological Review, 56,* 15–32.

McKenzie, D. J. (2005). Measuring inequality with asset indicators. *Journal of Population Economics, 18,* 229–260.

Mensch, B. S., Singh, S., & Casterline, J. B. (2005). Trends in the timing of first marriage among men and women in the developing world. In C. B. Lloyd, J. R. Behrman, N. P. Stromquist, & B. Cohen (Eds.), *The changing transitions to adulthood in developing countries: Selected studies* (pp. 118–167). Washington, DC: National Academies Press.

Mosteller, F. (1968). Association and estimation in contingency tables. *Journal of the American Statistical Association, 63,* 1–28.

Odimegwu, C. O. (Ed.). (2020). *Family demography and post-2015 development agenda in Africa*. Cham, Switzerland: Springer.

Park, H., & Smits, J. (2005). Educational assortative mating in South Korea: Trends 1930–1998. *Research in Social Stratification and Mobility, 23,* 103–127.

Parsons, T. (1971). *The system of modern societies*. Englewood Cliffs, NJ: Prentice-Hall.

Pesando, L. M. (2021). A four-country study on the relationship between parental educational homogamy and children's health from infancy to adolescence. *Population Research and Policy Review*. Advance online publication. https://doi.org/10.1007/s11113-020-09627-2

Pesando, L. M., & GFC Team. (2019). Global family change: Persistent diversity with development. *Population and Development Review, 45,* 133–168.

Prakash, R., & Singh, A. (2014). Who marries whom? Changing mate selection preferences in urban India and emerging implications on social institutions. *Population Research and Policy Review, 33,* 205–227.

Psaki, S. R., McCarthy, K. J., & Mensch, B. S. (2018). Measuring gender equality in education: Lessons from trends in 43 Countries. *Population and Development Review, 44,* 117–142.

Qian, Z., & Preston, S. H. (1993). Changes in American marriage, 1972 to 1987: Availability and forces of attraction by age and education. *American Sociological Review, 58,* 482–495.

Rauscher, E. (2020). Why who marries whom matters: Effects of educational assortative mating on infant health in the United States 1969–1994. *Social Forces, 98,* 1143–1173.

Raymo, J. M., & Xie, Y. (2000). Temporal and regional variation in the strength of educational homogamy. *American Sociological Review, 65,* 773–781.

Reniers, G., & Tfaily, R. (2012). Polygyny, partnership concurrency, and HIV transmission in sub-Saharan Africa. *Demography, 49,* 1075–1101.

Rosenfeld, M. J. (2008). Racial, educational and religious endogamy in the United States: A comparative historical perspective. *Social Forces, 87,* 1–31.

Sahn, D. E., & Stifel, D. C. (2000). Poverty comparisons over time and across countries in Africa. *World Development, 28,* 2123–2155.

Schwartz, C. R. (2013). Trends and variation in assortative mating: Causes and consequences. *Annual Review of Sociology, 39,* 451–470.

Schwartz, C. R., & Han, H. (2014). The reversal of the gender gap in education and trends in marital dissolution. *American Sociological Review, 79,* 605–629.

Schwartz, C. R., & Mare, R. D. (2005). Trends in educational assortative marriage from 1940 to 2003. *Demography, 42,* 621–646.

Schwartz, C. R., & Mare, R. D. (2012). The proximate determinants of educational homogamy: The effects of first marriage, marital dissolution, remarriage, and educational upgrading. *Demography, 49,* 629–650.

Shapiro, D., & Gebreselassie, T. (2014). Marriage in sub-Saharan Africa: Trends, determinants, and consequences. *Population Research and Policy Review, 33,* 229–255.

Shimeles, A., & Nabassaga, T. (2018). Why is inequality high in Africa? *Journal of African Economies, 27,* 108–126.

Shimeles, A., & Ncube, M. (2015). The making of the middle-class in Africa: Evidence from DHS Data. *Journal of Development Studies, 51,* 178–193.

Singh, S., & Samara, R. (1996). Early marriage among women in developing countries. *International Family Planning Perspectives, 22,* 148–157.

Sinkhorn, R., & Knopp, P. (1967). Concerning nonnegative matrices and doubly stochastic matrices. *Pacific Journal of Mathematics, 21,* 343–348.

Smith-Greenaway, E., & Trinitapoli, J. (2014). Polygynous contexts, family structure, and infant mortality in sub-Saharan Africa. *Demography, 51,* 341–366.

Smits, J. (2003). Social closure among the higher educated: Trends in educational homogamy in 55 countries. *Social Science Research, 32,* 251–277.

Smits, J., & Park, H. (2009). Five decades of educational assortative mating in 10 East Asian societies. *Social Forces, 88,* 227–255.

Smits, J., & Steendijk, R. (2015). The International Wealth Index (IWI). *Social Indicators Research, 122,* 65–85.

Smits, J., Ultee, W., & Lammers, J. (1998). Educational homogamy in 65 countries: An explanation of differences in openness using country-level explanatory variables. *American Sociological Review, 63,* 264–285.

Smits, J., Ultee, W., & Lammers, J. (2000). More or less educational homogamy? A test of different versions of modernization theory using cross-temporal evidence for 60 countries. *American Sociological Review, 65,* 781–788.

Tabutin, D., & Schoumaker, B. (2004). The demography of sub-Saharan Africa from the 1950s to the 2000s: A survey of changes and a statistical assesment. *Population, 59,* 457–556.

Torche, F. (2010). Educational assortative mating and economic inequality: A comparative analysis of three Latin American countries. *Demography, 47,* 481–502.

United Nations Department of Economics and Social Affairs (UN-DESA). (2015). *World urbanization prospects: The 2014 revision*. New York, NY: UN-DESA, Population Division.

van de Walle, E., & Meekers, D. (1994). Marriage drinks and kola nuts. In C. H. Bledsoe & G. Pison (Eds.), *Nuptiality in sub-Saharan Africa: Contemporary anthropological and demographic perspectives* (pp. 57–73). Oxford, UK: Clarendon Press.

Ward, P. (2014). Measuring the level and inequality of wealth: An application to China. *Review of Income and Wealth, 60,* 613–635.

Western, B., Bloome, D., & Percheski, C. (2008). Inequality among American families with children, 1975 to 2005. *American Sociological Review, 73,* 903–920.

Wittenberg, M., & Leibbrandt, M. (2017). Measuring inequality by asset indices: A general approach with application to South Africa. *Review of Income and Wealth, 63,* 706–730.

Yusuff, S. O. (2014). Gender dimensions of informal cross border trade in West-African sub-region (ECOWAS) borders. *International Letters of Social and Humanistic Sciences, 29,* 19–33.

Luca Maria Pesando
lucamaria.pesando@mcgill.ca

Department of Sociology and Centre on Population Dynamics (CPD), McGill University, Montréal, Québec, Canada