Gender Inequality in Early Adulthood Work and Family Life Courses in Egypt: Change and Continuity

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Abstract

In Egypt, despite notable increases in the human development index, women's employment participation has remained low and fertility recently even increased. This is inconsistent with theories on the first and second demographic transition. We map gender inequality in early adult work and family life courses from age 9 to 30 for cohorts born between 1956 and 1982 in Egypt as a particularly interesting country to study the dynamics of a stalled or reversed development towards gender equality. Rich retrospective life course data from the Egyptian labor market panel survey and multichannel sequence and cluster analyses show 5 typical combined work and family life courses. Results specify very high levels of gender polarization in life courses mainly characterized by the employment patterns. Patriarchal pathways are less common among younger generations. Yet, access to meritocratic pathways is also harder for younger generations and improvements in economy do not increase the transition from patriarchal to meritocratic pathways in Egypt. Our findings further emphasize the importance of cultural, structural, and family conditions in individuals' life courses.

Introduction

Key human development indicators show that the Middle East and North Africa (MENA) region has undergone considerable progress in the last decades. While women's life expectancy and standard of living increased drastically, maternal and infant mortality decreased (World Bank 2013). The region also experienced the fastest educational expansion in the world between 1990 and 2010 (UNESCO 2011). Yet, these improvements in education and standard of living did not come along with women's increasing economic involvement as observed in many other world regions and women's employment has changed little in the region (Gebel and Heyne 2014; Spierings et al. 2010). MENA countries still fall considerably short on indicators of gender equality including women's labor force participation and political empowerment (Nabli and Chamlou 2004). Furthermore, the region globally ranks as the last in terms of gender equality with an average 40 % remaining gender gap which is expected to converge in 157 years at the current progress (World Economic Forum 2017).

Egypt, an important representative and the most populous country of the region, even experienced a decrease in the share of employed women together with the increases in inactive women between 2006 and 2012 (Assaad and Krafft 2015). At the same time, Egypt shows different family demographic trends than the patterns of low and delayed fertility, a decline of marriage and general de-standardization of family life as predicted by the Demographic Transition Theory (DTT; Notestein 1945) and Second Demographic Transition Theory (SDT; Lesthaeghe and Van de Kaa 1986; Van de Kaa 1987) with rising educational attainment and standard of living. Recent evidence suggests that the decline in fertility has not stalled but started reversing with the increasing fertility rates (Krafft 2016). Taken together, these indicators point to a stall or even backlash against gender equality.

In western countries, many studies have documented the crucial role of family lives in limiting women's employment opportunities. Enabling mothers to work by providing

accessible childcare, reducing structural barriers and discrimination have been core factors in reducing gender inequality to historical lows (Budig et al. 2012; Blau and Kahn 2013), which however have stalled in some western countries since the 1990s as well (England 2010). In Egypt, there are arguments both for a strong and weak role of women's family lives for limiting their employment opportunities. On the one hand, there are strong expectations towards women to first fulfill their domestic duties that are also enshrined in law (Hoodfar 1997). This includes care obligations towards children and elderly relatives for whom a public or private care infrastructure is largely lacking (Forteza and Ramab 2006). One reason why women have not entered the labor market in greater numbers despite increasing education could, therefore, be that they cannot get out of their care obligations lacking a normative climate and infrastructure that would enable them to externalize unpaid care obligations.

On the other hand, other structural barriers, including a lack of jobs deemed acceptable for women and gender discrimination might be so strong, that women's family lives are largely irrelevant to their employment participation. In this case, women would have no employment opportunities regardless of whether they have children, husbands and elderly relatives to care for or not. To date, we know little about the work-family interplay for men and women in the MENA region, as most studies focus either on family demography or education and labor market characteristics, but rarely combine both.

In order to understand the work-family interplay in Egypt, research on labor economics has adopted a unidirectional approach where the influence of family events on employment careers are examined. For example, studies on the impact of family circumstances on Egyptian women's labor force participation have found that marriage and childbearing associated with being full-time caregivers and remaining out of the labor force (e.g., Gebel and Heyne 2014; Hendy 2015; Spierings and Smith 2007; Spierings et al. 2010). Conversely, studies examining the opposite direction have found that employment

opportunities postpone marriage and decrease fertility (e.g., Gebel and Heyne 2014; Krafft 2016).

Important insights into the relationship between work and family life courses are gained with these studies. Yet, focusing on either single labor market outcomes (e.g., employment) or family events (e.g., childbearing) with a unidirectional approach does not completely capture the dynamic interplay of work and family life. For instance, the decline in Egyptian women's employment and rise in fertility (Assaad and Krafft 2015) are striking as women's educational attainment is expected to be associated with higher involvement of women in the economy and lower fertility. Yet, multiple work and family events interact with each other and the timing, duration, and order of these events are relevant to understand the work-family interplay. It is possible that women stop their education after getting married and remain out of the labor force or go in and out of the labor force depending on the age of children.

To gain a better understanding of how work and family lives are related to each other, it is important to consider multiple events over a longer period. To the best of our knowledge, few studies that are limited to Western countries have examined the association between work and family life courses while acknowledging a life course perspective with multiple events (e.g., Aisenbrey and Fasang 2017). Unfolding how work and family trajectories are interrelated in Egypt and gender differences in these trajectories is important in a context that does not follow the DTT or SDT with low levels of female employment and gender equality. Moreover, considering the noticeable cultural and political influence of Egypt in the MENA region (Cooper et al. 2007), understanding the interplay between work and family life courses gains further importance due to the future policy recommendations in the region.

To address this limitation, we examine the interplay between work and family life courses from childhood to early adulthood as a process (Abbot 2005) that unfolds over the life

course rather than a unidirectional approach that assesses the impact of family events on labor market outcomes or vice versa. Specifically, we define life course trajectories based on the processes of educational and labor market attainment, and family formation between the ages 9 and 30 and examine how these life course trajectories are influenced by cultural and structural, and familial conditions. We address three research questions. First, what are the typical work-family life courses in Egypt? Second, does access to these work-family trajectories differ by gender? Third, can cultural, structural conditions explain sorting into these typical trajectories?

We draw on the Egypt Labor Market Panel Survey (ELMPS) data. The data is exceptionally suitable for answering these questions as it holds rich retrospective information on the marital and fertility histories as well as information on educational attainment and labor market history. This allows us to follow Egyptian men and women for 22 years and have full information on the work and family trajectories. The analyses proceed in two steps. First, we use multichannel sequence and cluster analysis to identify typical work-family trajectories in Egypt. Second, we relate these trajectories to gender and cultural and structural, and familial characteristics to elicit gender differences and factors that define life courses. Our multidimensional perspective allows us to examine trade-offs between education, employment, and family, contrarily to limiting the analyses to single education, employment, or family events.

Background

Egyptian context

Previous life course research has identified education, employment, and family as the three key processes in the transition to adulthood (Dhillon et al. 2009; Shanahan 2000). The first

process, educational attainment plays a vital role in individuals', especially women's life courses through different channels in developing countries. First, it influences employment patterns by increasing the chances of employment, having higher wages and more secure jobs (Gebel and Heyne 2014). Second, individuals' bargaining power in the marriage market and married women's empowerment in the household are influenced positively by educational attainment (Lewis and Lockheed 2008).

Education first became mandatory in Egypt for the first six years in 1980s and was extended nine years in 1991. Like many other MENA countries have experienced significant progress in improving literacy and educational attainment in the last two decades (UNESCO 2011). Yet, non-enrollment and early dropout before finishing compulsory education are still obstacles in Egypt, despite various benefits of education and compulsory schooling laws (Assaaad and Barsoum 2009; Dhillon et al.2009). These are especially relevant to Egyptian women who were historically disadvantaged in terms of educational attainment (World Bank 2004). According to ELMPS, 16 % of the Egyptian women born after 1976 have never attended school and expected or experienced failure in school were the main reasons for non-enrollment and early dropouts from education.

The second process in transition to adulthood is employment which is strongly linked to education. Young people in Egypt face severe constraints and gender differences in entering the labor market. Almost one out of three of youth are neither in education nor in employment or training (NEET, Barsoum et al. 2014). Contrary to the modernization theory (Lerner 1958; Lipset 1959), women's educational attainment is not necessarily associated with their involvement in economy. A large share of the burden of unemployment falls on women and highly educated youth. In 2012, 94 % of the unemployed women had reached at least secondary education and 70 and 15 % of these women remained inactive and

unemployed respectively after leaving school (Nazier and Ramadan 2016). Moreover, the rate of unemployed women increased by 16 % between 2006 and 2012 (Assaad and Krafft 2015).

Even when Egyptian youth find jobs, employment often is irregular. Non-participation in education and early dropout is strongly associated with child labor as an alternative to basic education. The prevalence of child labor is higher for men in Egypt and women experiencing non-participation in education or dropout are likely to engage in domestic works or unpaid family jobs (Assaad and Krafft 2015). According to the International Labour Organization (ILO; 2012), 9 % of children in Egypt aged between 5 and 17 worked as child laborers. These children are more likely to be employed in hazardous and low-quality jobs and most of these jobs are informal with no social security or contract. While the chances of remaining in similar types of informal jobs in adulthood are high, the likelihood of breaking the poverty cycle is very low for these individuals in later life (Wahba 2006).

Informal employment is a common trend in Egyptian's adulthood. According to Gatti and colleagues (2014), 45 % of the labor force was not covered by social security and an average of 35 % of Gross Domestic Product (GDP) was not registered between 2000 and 2007. Overall, agricultural and low-skilled workers and men are more likely to have informal jobs. In contrast, women are more likely to have formal white-collar jobs in the public sector, especially when they have higher educational attainment (Gebel and Heyne 2014).

The last process in transition to adulthood is family formation which includes marriage and childbearing behaviors. In Egypt, practices of marriage and sexuality are clearly defined by family laws which are based on heavily regulated Islamic law (shari'a) and transition to marriage is the key marker of adulthood (Mahmood 2012; Moghadam 2003). Women are considered "girls" until they marry (Sadiqi 2003). Adult roles including sexual relations, having children, and living independent of parents are only accessible to married individuals. Entry to marriage and childbearing, especially when giving birth to a boy, is

strongly related to the social status of a woman (Tadros 2010). Marriage includes a bargaining process between two families and women's bargaining power is strongest prior to marriage (Amin and Al-Bassusi 2004). Accordingly, women need to consider long-term costs of marriage and assure their own social and economic security as they often lack income and men have greater control over the stability of the marriage (Salefi-Islahani and Dhillon 2008). These long-term costs also include childbearing costs as marriage is linked to parenthood.

After marriage, women either start living with their husbands' families or start a nuclear family with their husbands. With the social and economic developments in the last decades, Egypt experienced a rise in the family formation age (Yount et al. 2012). Yet, the impact of education on women's timing of marriage in Egypt is less clear as compared to western countries. On the one hand, women's educational enrollment and attainment may delay marriage (Dhillon et al. 2009) as women may search for future husbands spending more on marriage (Amin and Al-Bassusi 2004). On the other hand, women may have higher educational attainment to increase their skills of becoming a good wife and mother (Elbadawy 2010). In contrast, the timing of marriage is clearer for lowly-educated women. Early marriage characterized by dropping out before completing higher levels of education is common in Egypt (El-Zanaty and Way 2009). Even among the younger generations born after 1976, 15 % of Egyptian women married before age 18 and 43 % of women who dropped out of education indicated marriage as the reason (Gebel and Heyne 2014).

Another important fact in Egyptian family life courses is that the fertility trends are not following the patterns suggested by the DTT and SDT. Although previous evidence indicated that fertility was declining with some stalls until 2008 (Bongaarts 2008), more recent evidence suggests that these declines were driven by postponement of motherhood. In addition, Krafft (2016) argues that the demographic transition in Egypt is not experiencing a

stall but a reversal by pointing that the total fertility rate (TFR) has risen to 3.5 in 2012 after reaching a low of 3.0 in 2008.

Dhillon and colleagues (2009) define two archetypal life courses for Arab men and women and each show different expressions for men and women. The first one refers to the patriarchal low-skilled life courses where individuals drop out of education and marry very early. Men make an immediate transition to employment and work in informal low-quality jobs as in a farm or family enterprise or as an irregular wage worker. Conversely, Arab women in this category combine a similar family life course of early family formation with three/four or more children with long-term non-employment (Heyne and Gebel 2016).

The second type refers to the meritocratic life courses where individuals marry later and form a nuclear family with fewer children compared to the patriarchal type. This type of life course involves higher educational attainment followed by a possibly lengthy search for jobs and then stable employment, particularly in the public sector. Marriage is delayed until stable employment is reached for men and education completed for women. The unemployment search period in the modern life course may be accompanied by informal work for men and lead to withdrawal from the labor force for women.

Cultural and structural conditions

The life-course paradigm assumes that individual life courses and decisions are embedded in the societal context. Cultural and structural conditions define opportunities and constraints which, subsequently, influences individuals' decisions and transitions (Breen and Buchmann 2002). Mayer (2009) argues that life courses have to be analyzed jointly with cultural and structural conditions. These conditions vary across countries and time and shape individuals' life courses (Dhillon and Yousef 2009**).**

In many affluent democracies, both children and their parents' generation have already reached relatively similar levels of education, female labor force participation and standard of living, with the Post WW II economic development and women's rights movements and educational expansion in the 1960s and 1970s. Therefore, parent and child generations born in the post-WW II years face reasonably similar opportunity structures for establishing work and family lives, despite each cohort having also experiencing unique exposure for instance to specific economic recessions. Conversely, MENA countries are undergoing major transformations such as the replacement of illiteracy with high levels of educational attainment, within a few new generations. It is thereby possible that parents' and children's life courses are characterized by more noticeable differences in MENA countries, given that they faced vastly different macrostructural opportunities in young adulthood.

Nevertheless, life course differences across generations do not follow the patterns of Western countries. Economic development and modernization characterized by increasing female labor force participation in Western countries, do not apply for MENA countries (Ross 1998; Spierings et al. 2010). Some MENA countries including Egypt even experience a decline in women's involvement in economy (Assaad and Krafft 2015). Ross (2008) emphasizes the changes in the opportunity structure due to the oil-revenue based economies leading to a shift from export-oriented sectors such as agriculture and manufacturing to non-export sectors such as construction and retail. Accordingly, while sectors, where women were traditionally employed, are on the decline, private sector jobs dominated by men are increasing. Assaad and Kraft (2015) show that decreasing female labor force participation and chances of finding a formal job in Egypt are driven by changes in opportunity structure and declines in public sector jobs. Furthermore, state support for maternity leave and childcare arrangements are weak in these countries (Forteza and Rabam 2006). Public sector employment thereby gains further importance in women's life courses as such arrangements

that ease reconciling work and family life are mainly limited to this sector. These structural conditions also differ within countries. In Egypt, job opportunities offered to women are considerably lower in rural areas, whereas public sector employment is higher in urban areas due to different employment structures in rural areas and cities (Nazier and Ramadan 2016).

Apart from the structural barriers, cultural barriers influence individuals' life courses. Although laws regarding the minimum age of marriage and employment and compulsory schooling exist, these legal norms are not strictly enforced in MENA countries and informal norms noticeably influence individuals' pathways (Kelly and Breslin 2010). Men's responsibilities in a union are limited to providing for the family, whereas women's main responsibilities are children and domestic work (Hoodfar 1997). Women may only work if there is no reduction in their domestic working hours and traditions or culture are considered as the main reasons for not attending school or employment (Gebel and Heyne 2014). Fear of sexual harassment in public transportation and cultural norms are further barriers towards women's mobility and taking any job in the labor market (Kelly and Breslin 2010).

While homogamy only occurs for traits such as education and attractiveness (Elbadawy 2010), negative assortative mating is a common trend in MENA countries. Accordingly, educational attainment for women is not solely an investment in human capital but finding higher marriage prospects. Negative assortative mating, early marriages, and extended families are more prevalent in rural areas of Egypt where traditional norms and conservative values are strong (Gebel and Heyne 2014). Moghadam (2004) explains that the traditional patriarchy has been eroded with the shift from extended to nuclear families in the last decades. Yet, the new era is described as neopatriarchal with conservative forces strengthening the traditional roles in a nuclear family setting (Moghadam 2004: 140).

Familial conditions

Previous research has emphasized the importance of families in individuals' life courses. Values regarding family formation (Starrels and Holm 2000), employment, and gender attitudes (Farre and Vella 2013) are transmitted from parents to children. Children adopt their parents' values as deviations are costly (Glass et al. 1986). Moreover, Arab societies have a collective culture of social life and family members play an important role in shaping individuals' values, beliefs, and later adulthood lives (Rugh 1997). Young people typically live with their parents and depend on them until they marry. In Arab societies, adolescents show less by rebellion and social distance to their parents compared to Western societies (Davis and Davis 1989). Individuals' identities are derived from family associations (Al-Tawila et al. 2003), and they define themselves in relation to their families (Joseph 1993).

Parents might be influential in their children's life courses with their economic, social, and cultural resources. Individuals may have higher educational attainment and better job prospects as they do not have to start working at an early age when their parents have economic resources (Wahba 2006). For instance, having a father who worked at age 14 or below is associated with higher risks of being in child labor even after controlling for parental education (Wahba 2006). One explanation is the child labor-poverty trap (Emerson and Souza 2003): Parents from poor families work when they are children, cannot invest in schooling and remain trapped in low wages and poverty. Consequently, they send their children to work early to contribute to household income and adhering to normative expectations of early work in the family.

Parents' cultural capital in shaping individuals' life courses is especially important in Egypt where educational quality is generally low, the prevalence of traditional gender roles is strong, and institutionalized support for children is weak. Non-enrollment in education, especially in the presence of male teachers and peers and longer distance to school (Lloyd et

al. 2001), early marriage, and kinship marriage (Amin and Al-Bassusi 2004) chances are higher when parents have traditional values. Furthermore, fathers exert a strong influence on women's marital and job choice decisions (Gebel and Heyne 2014). Lastly, parents' social ties might be influential especially on employment. (Granovetter 1974). Indeed, 50 % of the unemployed women report that they asked their parents or relatives for job opportunities (Gebel and Heyne 2014). Taken together, these findings indicate the importance of parents in the transition from patriarchal low-skilled to meritocratic life courses.

Data

We used the Egypt Labor Market Panel Survey (ELMPS, OAMDI 2016), a rich panel dataset that includes information on individuals' labor market and work characteristics with three rounds to date: 1998, 2006, and 2012. It is carried out by the Economic Research Forum (ERF) together with Egypt's Central Agency for Public Mobilization and Statistics (CAPMAS, 2015). Each new round includes previous and split households, and additionally a refresher sample. The 2012 dataset consists of 12,060 households and 49,186 individuals.

ELMPS includes retrospective information which is remarkably suitable to identify each individual's life courses. In each round, all individuals aged between 15 and 64 who ever worked provide information on work and education history. The survey instruments contain detailed questions about education, job characteristics, and start and end date of each event. Using this information, we identified the work trajectories of the individuals on a yearly basis. The 2006 and 2012 rounds additionally include detailed fertility data for ever-married women aged between 15 and 49 and information on the start and end date of their marriage. In addition, we have information on marital history, including divorce, widowhood, and

remarriage. Using this information, we were able to identify yearly family trajectories of the respondents in the sample using these two waves.

We focused on work and family life courses from age 9 to 30. The examined age interval started from age 9 because Egyptians, drop out of education and start working and forming family very early (e.g., Crandall et al. 2016). For instance, individuals in education were 69.6 % (i.e., 6,569) at age 9, whereas it dropped to 66.7 % (6,292) at age 10. In the same vein, three women in our sample got married when they were 10. Consequently, very early transitions were captured and considered in the analyses with this strategy.

Tracing individuals from age 9 to 30 provides a meaningful observational window that captures the active family formation and labor market entry processes of young adult life courses in Egypt. Extending the analysis to later ages would come at the cost of lower case numbers and a restriction to older birth cohorts while providing little additional substantive information. Moreover, birth question was only asked to women aged between 18 and 49 and, thus, we only focused on individuals born after 1956 using also the fertility history from the 2006 wave. Consequently our cohorts ranged from 1956 to 1982 thereby allowing us to map social change in work and family life courses from the 1960s until 2012. We excluded individuals born after 1982 and remain with 12,262 cases born 1956-1982 who can in principle be included in our analysis.

We used retrospective information on education and labor market to identify the work trajectories. The work sequences were coded in 12 states: Out of labor force (OLF), Education (EDU), and 5 formal and 5 informal "employment" categories according to the 1-digit ISCO classification.[1]Informal jobs were defined as jobs without a contract or social security.

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[1] I) High white-collar worker (referring to (1) legislators, senior officials, and managers (2) professionals (3) technical and associates, professionals), II) Low white-collar worker (referring to (4) clerks (5) service and shop), III) Agricultural worker (referring to (6) skilled agricultural and fishery workers), IV) Unskilled worker

Similar to the identification of work trajectories, we used retrospective information on fertility and marriage to define family trajectories. As mentioned above, fertility history was only available for ever-married women in ELMPS. Yet, we obtained fertility information of men by linking them to their partners using unique partner identifiers. Men, who reported to be married, but whose spouse was not present in the household (25 cases) were dropped from our sample as their fertility history could not be identified.

We specified 8 family states by combining the union status with the number of children: 1) Single with no child (SNC), 2) Separated with no child (SEP), 3) Separated with children (SEPC), 4) Married with no child (MNC), 5) Married with 1 child (M1C), 6) Married with 2 children (M2C), 7) Married with 3 children (M3C), and 8) Married with 4+ children (M4C). Marital and fertility history were missing for 10 and 176 cases respectively. and these individuals were also excluded from the analyses as we were unable to identify their family life courses. The final sample consisted of 12,076 individuals.

Methods

We use multichannel (Gauthier et al. 2010; Pollock 2007) sequence analysis followed by cluster analysis to identify typical work and family life courses in Egypt. Multichannel sequence analysis can uncover interactions of the dimensions considered, in our casework and family lives. It can, therefore, identify patterns as the female and male version of the 'patriarchal' life course type that combines a similar family life course with vastly different trajectories of child labor or continual non-employment. The probability of sorting into different life course types by gender and cultural, structural, and familial conditions is estimated with logistic regression models.

(referring to (7) craft and related trade workers (8) plant and machine operators and assemblers), and V) Elementary occupations.

Multichannel Sequence Analysis

Sequence analysis is a technique that is used in life course research to study processes (e.g., family trajectories from age 9 to 30) that are an ordered collection of states in an observed period. These ordered states as a whole represent sequences. Sequence analysis identifies the most salient and distinctive properties by measuring the similarities between the sequences. Accordingly, it enabled us to study a set of trajectories over time and identify ideal types of trajectories.

The first method for sequence comparison used in social sciences was Optimal Matching (OM; Abbott 1995), a technique derived from biostatistics. In this approach, the distance between two sequences is calculated as the "cost" of changing one sequence into another (MacIndoe and Abbott 2004). The alignment of one sequence into another is made in three steps. Substitution of one state into another followed by insertion or deletion of the states. The cost of each step is specified by the researcher and the distance between two sequences is defined by calculating the minimum cost of converting one sequence into another.

Yet, this approach is traditionally used for examining single-channel sequences. Extending it to multichannel sequences such as the simultaneous consideration of work and family life courses is challenging. In this study, we used the arguably most advanced approach proposed by Pollock (2007) and systemized by Gauthier and colleagues (2010). We combined the work states with the family states to assess the similarities between individuals' work-family life courses and identify ideal typologies. For instance, if an individual was married with one child (M1C) and was out of the labor force (OLF) at age 18, the combined state is represented as [M1C, OLF]. Conversely, the combined state of a single individual who

is still in education with no children at age 18 is [SNC, EDU]. An illustration of two persons' combined work-family states would be as follows:

Age	15	16	17	18	19	20
Person A	[SNC, EDU]	[SNC, EDU]	[SNC, EDU]	[MNC, OLF]	[M1C, OLF]	[M2C, OLF]
Person B	[SNC, OLF]	[SNC, OLF]	[SNC, OLF]	[SNC, OLF]	[SNC, OLF]	[SNC, INF AGR]

In this example, person A is single with no child and in education until age 18. (S)he drops out of education, becomes out of the labor force, and gets married at age 18. In the following two years, person A remains out of the labor force and has his/her first and second children consecutively in the next two years. Person B is single with no child and out of the labor force until age 20 and finds a job as an informal agricultural worker.

The substitution costs are specified separately for each dimension in contrast to the other approaches in the multichannel sequence analysis (Gauthier et al. 2010; Pollock 2007). Yet, the dimensions are aligned jointly, and the total substitution cost is calculated by summing up the substitution costs of each dimension at each time point. In our study, this refers to the total substitution cost of work and family trajectories at each age.

We specified the same substitution cost for work and family trajectories and used OM with the constant substitution costs of 2 and indel costs of 1. We prioritized the timing and order of the work and family states with this strategy (MacIndoe and Abbott 2004; Aisenbrey and Fasang 2010). Cross-sectional weights were used to identify work and family life courses in Egypt.[2]

To identify the appropriate number of typologies to be extracted, we followed two steps. First, we used ward clustering. Based on the ward clustering results, we used partitioning around medoids (PAM) and obtained better groupings with this combined

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[2] See Assaad & Krafft (2013) for more information on the ELMPS and discussion of sampling weights.

strategy (Studer 2013). For the comparison of the cluster-solutions and identification of the most distinct number of clusters to be included, we used average silhouette width (ASW) cut-off criteria which quantitively compares the different numbers of cluster-solutions based on the average within-cluster distances and average between-cluster distances (Studer 2013). Accordingly, the cluster-solution with the highest ASW value indicates that observations are most similar within their groups and most distinct from the other groups. Average silhouette widths indicated that four, three, and five cluster-solution were the optimum solutions in order (the cut-off criteria is illustrated in the Appendix, Figure A1). The five-cluster solution provided substantively more meaningful typologies. We thereby used the six-cluster solution in the main models. The R packages TramineR, TraMineRExtras, and WeightedCluster (Gabadinho et al. 2011; Studer 2013) were used for the sequence analysis and cluster analyses.

Logistic Regression

After the identification of typical work and family life courses, we created dummies for each cluster obtained from the multichannel sequence and cluster analysis. We estimated the probability of sorting into a specific work-family typology by gender with separate logistic regressions.[3] Following Winship and Radbill (1994), we did not use sampling weights in the logistic regressions as sampling is unrelated to the dependent variable in such a case. Yet, we replicated the analysis using sampling weights as a robustness check. We included a set of variables that are related to the cultural, structural, and familial conditions.

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[3] The results are interpreted as being in a specific work-family cluster as compared to any other groups with the logistic regression. We assessed the reliability of these models using multinomial logit models and the findings were robust to this specification.

At the country level, we included the natural logarithm of Gross Domestic Product (GDP) at purchasing power parity (PPP) and Women's Political Empowerment Index (WPEI) at age 9. GDP is obtained from the International Human Development Indicators database (UNDP 2017) and measures socioeconomic development. WPEI is based on the Varieties of Democracy dataset (Coppedge et al. 2015) and measures gender equality. It is a measure based on women's fundamental civil liberties, civil society participation and open discussion of political issues (Coppedge et al. 2015). Sundström and colleagues (2017) posit that WPEI is superior in temporal scope and coverage of less advanced societies, and the estimates are more precise and cover a longer period than other gender equality measurements such as the Gender Inequality Index (GII) or Gender-related Development Index (GDI).

ELMPS provides information at the "marakiz" level which is the second level of hierarchy that distinguishes within the governorates. Using this information and 1998, 2006, and 2012 waves of the ELMPS, we calculated the yearly share of (i) literate adults, unpaid workers, (iii) public sector workers, and (iv) and high white-collar workers in each "marakiz". As discussed earlier, these measures were strongly associated with cultural and structural conditions. In general, it is difficult to distinguish between structural and cultural factors as these spheres strongly influence each other (Pfau-Effinger 2005) and these items were strongly correlated to each other. Accordingly, we constructed a yearly "district scale" for each "marakiz" using these items, and Cronbach's alpha was 0.84.[4] Subsequently, the calculated district-scale at age 9 entered to the regression models.

We additionally included a categorical variable for the region as both family (e.g., Krafft 2016) and work (e.g., Nazier and Ramadan 2016) life courses of Egyptians are influenced by the communities and place of residence and rural areas are strongly

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[4] The share of unpaid workers was reveresed in polarity.

characterized by traditionalism (e.g., Gebel and Heyne 2014).[5] We also included a categorical variable for cohort to map the social change across generations.

ELMPS contains instruments about familial characteristics. We used the highest educational degree received by any parents and father's occupation and a dummy indicating whether the mother was working when the respondent was 15.

Apart from the socioeconomic status, parental background factors may influence work and family life courses through the number of siblings. On the one hand, individuals' family formation preferences are positively correlated with their parents' family formation preferences (Axinn et al. 1994). On the other, as indicated by the resource dilution hypothesis, labor market outcomes are influenced negatively by the number of siblings (Blake 1989). Based on these considerations, we included the number of siblings in the analyses.

An overview of these predictors included in the models is located in the Appendix, Table A1. We used multiple imputations and created 100 imputations for the missing values.

Results

Multichannel Sequence and Cluster Analyses

Figure 1 shows the sequence index plots of the 5-cluster solution obtained from the multichannel sequence and cluster analysis. The family trajectories are shown on the left-hand side and the work trajectories are shown on the right-hand side. Each row represents an individual's work and family trajectories from age 9 to 30. The clusters are sorted according to the average occupational prestige score of each cluster. Moreover, the size of the clusters is proportional to their corresponding share in the sample. Table 1 presents descriptive

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[5] We note that the region might be affected by the work and family trajectories, while it is clear that the other predictors are not influenced by the work and family life courses. Yet, evidence shows that geographic mobility is substantially low in Egypt (Assaad and Arntz 2005).

information on each cluster including gender and the average state durations in each cluster to quantitively understand the work and family characteristics of each cluster. Moreover, the Relative Frequency (RF) plots sorted by the silhouette values (Fasang and Liao 2014) are shown in Figure A2 in the Appendix. The figure illustrates the most representative individuals in each cluster that is informative to understand the main patterns in each cluster.

Overall, the clusters were divided into two groups by employment. The first three clusters represented the working population in Egypt, contrarily the last two groups represented the non-working population. An overview of the five clusters highlights how work and family life courses in Egypt are polarized by gender. Men comprised 75.1, 86.9, and 97 % of the first three clusters respectively. Conversely, 74.9 and 87.4 % of the latter clusters were women in the given order.

The first typology (26.5 %), *Formal high white-collar worker and late marriage*, was the most common life course and resembled the "meritocratic" pathway of men where higher educational attainment is complemented by job searches and/or formal employment in high white-collar jobs and later marriages. Average individuals in this group did not marry until their 30s. After around 12 years of education, they were likely to work in high white-collar jobs with contracts and social security. The highest share of men (i.e., 36.1 %) in our sample was included in this group. Although large gender differences persisted, in comparison to other pathways, men and women were more equally distributed in this group. Moreover, more than 3 out of 4 employed women were in this group. This is in line with Gebel and Heyne (2014) who found that 92 % of the women entrants in the public sector obtain access to these types of jobs after higher educational attainment.

The second group (12.4 %), *Informal agricultural worker and married*, was associated with the "patriarchal" pathway of men where they drop out of education, start working in informal jobs and marry very early (Dhillon et al. 2009). This was the least common pathway.

Individuals in this pathway married, on average, at age 25 and started having children after 1.8 years of marriage. Furthermore, they worked at informal agricultural jobs around 15 years between age 9 and 30. This pathway was noticeably more common among men and only around 3.6 % of women were included in this group.

Informal unskilled worker with later marriage was the third typology (15.9 %) and comprised almost only men. Similar to the *Formal high white-collar worker and late marriage,* individuals in this group married at the end of their 20s and started having children one year after their marriages. They slightly had more education than individuals included in the *Informal agricultural worker and married* pathway. On average, they spent 11.5 years working in informal unskilled manual jobs after 5 years of education.
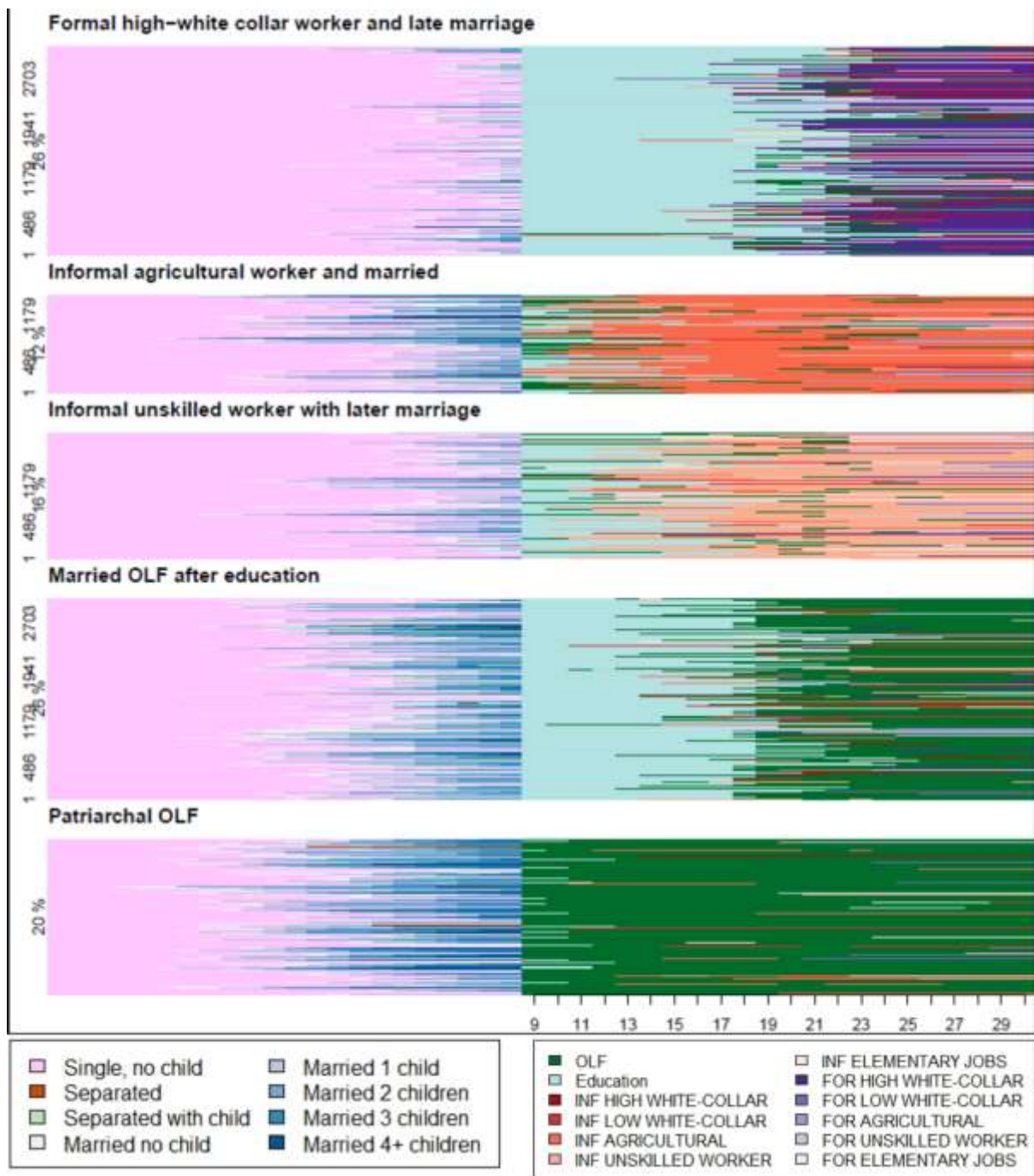
Figure 1 5-cluster solution

The last two pathways included mainly women and individuals out of the labor force. The fourth group, *Married OLF after education* (25.5 %) was the most common work and family trajectory in our sample and among women. This pathway was related to

"meritocratic" women in Arab societies who drop out of the labor force after high educational attainment. It was similar to the other "meritocratic" pathway, namely *Formal high white-collar worker and late marriage* as it involved higher educational attainment and men and women were more equally distributed. Yet, individuals in this group remained out of the labor force after marrying. in their early 20s and had at least three children before age 30.

Table 1 Descriptive information on clusters

	Formal high-white collar and late marriage	Informal agricultural worker and married	Informal unskilled worker with later marriage	Married OLF after education	Patriarchal OLF
S	19.58	15.77	18.17	13.94	12.26
SEP	0.01	0.02	0.02	0.04	0.08
SEPC	0.01	0.01	0	0.09	0.08
M	0.88	1.82	1.37	1.61	2
M1C	0.92	1.76	1.36	2.41	2.02
M2C	0.45	1.39	0.75	2.5	2.39
M3C	0.13	0.73	0.27	1.08	1.82
M4C	0.03	0.5	0.06	0.35	1.35
OE	1.74	2.22	2.08	9.43	19.3
EDU	11.87	2.62	4.99	9.7	0.69
INF HIGH-WHITE	0.64	0.1	0.31	0.38	0.14
INF LOW-WHITE	1.01	0.42	0.7	0.65	0.4
INF AGRIC	0.35	14.83	0.39	0.25	0.6
INF UNSKI-MAN	0.27	0.43	11.58	0.23	0.25
INF ELEM	0.31	0.33	0.47	0.19	0.2
FOR HIGH-WHITE	4.35	0.05	0.08	0.23	0.08
FOR LOW-WHITE	0.65	0.25	0.26	0.38	0.06
FOR AGRIC	0.03	0.09	0.02	0.04	0.03
FOR UNSKI-MAN	0.6	0.47	0.91	0.41	0.2
FOR ELEM	0.18	0.19	0.2	0.11	0.07
Women	24.93	13.06	3.02	74.93	87.39

Source: Egypt Labor Market Panel Survey (ELMPS) 2012

The fifth pathway, *Patriarchal OLF* (19.7 %), was similar to the "patriarchal" pathways of women where they almost never had any education or employment. Individuals in this group married in their early 20s and had at least four children before age 30.

Logistic regressions

After identifying the clusters, we estimated how the probability of being in a specific typology is influenced by gender and other background characteristics without district and country-level determinants. Estimated effects are shown in Table 2. For the quantification and comparability of the effects across models, we calculated and presented the marginal effects as the interpretation and comparison of logit models are not straightforward (Karlson et al. 2012).

Gender differences in work and family life courses in terms of percentage points are further illustrated in Figure 2 which overviews the highly polarized the work-family trajectories of Egyptian men and women. The first three trajectories where individuals were employed with diverse job characteristics and family formation patterns were in favor of men. In contrast, women were more likely to be in the latter two pathways in which individuals are not involved in the economy. The pathways were not only gender-segregated, but also the difference in terms of magnitude was substantial even after controlling for familial conditions, region, and cohorts. The probability of sorting into first three clusters characterized by employment was 21, 16, and 27 percentage points higher for men respectively. Contrarily, access to the latter two trajectories characterized by unemployment was 30 and 34 % percentage points higher for women in order.

Parental education was an important determinant of individuals' work and family life courses. Accessing the "meritocratic" pathway (i.e., *Formal high white-collar and late*

marriage) increased by 37 percentage points when a father was holding a university degree. Sorting into the pathways characterized by low-quality informal jobs was associated with lower parental education. Similar parental influences were also observed in the other two pathways where women were overrepresented. Having an illiterate father decreased the likelihood of sorting into *Married OLF after Education* pathway. Moreover, access to the two "patriarchal" pathways where women remain out of the labor force with no education decreased significantly with father's education.

Furthermore, evidence for poverty trap (Emerson and Souza 2003) was observed in the analyses. Sorting into the *Informal agricultural worker and married* pathway was more likely when having an agricultural worker father. Conversely, the risk of being in the *Informal unskilled worker with later marriage* cluster was higher when the father was an unskilled worker. Having a high white-collar worker father increased access to the meritocratic pathway.

In line with the resource dilution hypothesis (Blake 1989), labor market outcomes were influenced by family size. The likelihood of access to the "meritocratic" pathway decreased with the number of siblings. Having more siblings also increased the risk of sorting into pathways characterized by low-quality informal jobs. The intergenerational transmission of family formation preferences (Axinn et al. 1994) was observed in the *Patriarchal OLF* trajectory. The probability of being in this pathway increased with the number of siblings. Patriarchal pathways of men (i.e., *Informal agricultural worker and married*) and women (i.e., *Patriarchal OLF*) were more common in rural areas, whereas the other three pathways where individuals have at least some educational attainment was less common in rural areas.

Table 2 Logistic regressions without district and country-level determinants (standard errors in parentheses)

	Formal high-white collar and late marriage	Informal agricultural worker and married	Informal unskilled worker with later marriage	Married OLF after education	Patriarchal OLF
Women	-0.211 ***	-0.160 ***	-0.272 ***	0.303 ***	0.343 ***
	(0.007)	(0.005)	(0.006)	(0.008)	(0.007)
Parent's education (ref: illiterate)					
Reads & writes	0.110 ***	-0.031 ***	-0.042 ***	0.062 ***	-0.097 ***
	(0.010)	(0.008)	(0.008)	(0.010)	(0.009)
Less than intermediate	0.161 ***	-0.055 ***	-0.052 ***	0.062 ***	-0.140 ***
	(0.013)	(0.010)	(0.010)	(0.012)	(0.010)
Intermediate	0.250 ***	-0.062 ***	-0.121 ***	0.034 *	-0.161 ***
	(0.019)	(0.015)	(0.011)	(0.016)	(0.013)
Above intermediate	0.308 ***	-0.106 ***	-0.158 ***	0.043	-0.170 ***
	(0.036)	(0.021)	(0.014)	(0.030)	(0.024)
University	0.369 ***	-0.086 ***	-0.161 ***	-0.030 +	-0.188 ***
	(0.024)	(0.018)	(0.009)	(0.018)	(0.014)
Father's occupation (ref: elementary occupation)					
High white-collar	0.046 **	-0.009	-0.037 **	0.017	-0.041 **
	(0.015)	(0.009)	(0.012)	(0.015)	(0.013)
Low white-collar	-0.009	0.030 *	-0.026 +	0.007	0.003
	(0.016)	(0.012)	(0.014)	(0.017)	(0.015)
Agricultural worker	-0.053 ***	0.117 ***	-0.066 ***	-0.073 ***	0.024 *
	(0.013)	(0.008)	(0.010)	(0.013)	(0.011)
Unskilled manual worker	-0.023 +	-0.017 *	0.042 ***	-0.006	-0.006
	(0.013)	(0.008)	(0.012)	(0.014)	(0.012)
Armed forces	0.069 +	-0.024	-0.028	-0.003	-0.079 *
	(0.036)	(0.027)	(0.034)	(0.036)	(0.037)
Working mother	0.024	0.019	0.002	-0.063 ***	0.020
	(0.016)	(0.015)	(0.015)	(0.014)	(0.016)
Number of siblings	-0.010 ***	0.002 **	0.004 ***	0.000	0.003 **
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Region (ref: Cairo)					
Alexandria	0.011	0.010	-0.025 +	-0.024	0.040 **
	(0.016)	(0.009)	(0.014)	(0.016)	(0.015)
Urban lower	-0.007	0.035 ***	0.028 *	0.008	-0.027 *
	(0.015)	(0.009)	(0.014)	(0.015)	(0.013)
Urban upper	0.036 *	0.067 ***	-0.043 **	-0.017	0.014
	(0.014)	(0.009)	(0.013)	(0.014)	(0.012)
Rural lower	-0.039 **	0.124 ***	-0.037 **	-0.014	0.024 *
	(0.013)	(0.008)	(0.012)	(0.014)	(0.011)
Rural upper	-0.098 ***	0.145 ***	-0.044 ***	-0.098 ***	0.118 ***
	(0.014)	(0.009)	(0.012)	(0.014)	(0.012)
Cohort (ref: <1965)					
1965-69	-0.045 **	0.001	0.028 **	0.034 **	-0.028 *
	(0.013)	(0.009)	(0.010)	(0.013)	(0.012)
1970-74	-0.047 ***	-0.014	0.052 ***	0.066 ***	-0.063 ***
	(0.013)	(0.009)	(0.009)	(0.012)	(0.011)
1975-79	-0.087 ***	-0.010	0.065 ***	0.097 ***	-0.074 ***
	(0.012)	(0.008)	(0.009)	(0.012)	(0.011)
>1979	-0.104 ***	-0.022 *	0.070 ***	0.121 ***	-0.072 ***
	(0.012)	(0.009)	(0.009)	(0.013)	(0.011)
N	12,076	12,076	12,076	12,076	12,076

Source: Egypt Labor Market Panel Survey (ELMPS) 2012; +p<0.10, *p<0.05, **p<0.01, ***p<0.001
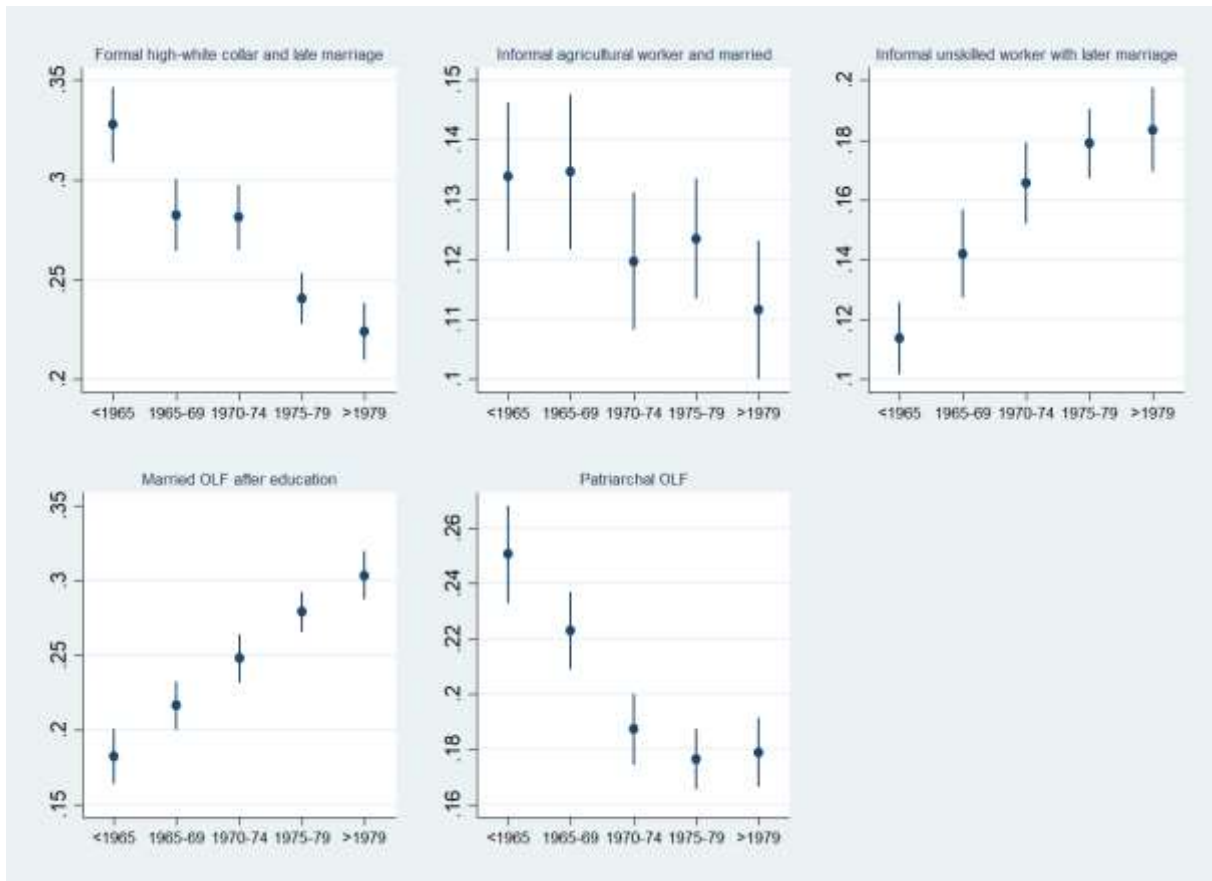
Figure 2 Predicted probabilities of cohorts

Figure 2 outlines how the predicted probability of being in a specific cluster differ across cohorts. The probability of sorting into the meritocratic pathway decreases for younger generations. Yet, patriarchal pathways (i.e., *Informal agricultural worker and married* and *Patriarchal OLF*) are less common among new generations. Conversely, access into pathways characterized by educational attainment followed by informal unskilled jobs for men with later marriage and being out of the labor force with marriage for women is more likely for younger cohorts. Taken together, these findings indicate that newer generations' life courses are diverging from the patriarchal pathways but formal white-collar jobs are less accessible for them at the same time.

Table 3 presents the estimates where we additionally included variables at the district and country-level. After the inclusion of these variables, cohort differences became

insignificant suggesting that cultural and structural differences account for differences across generations. The probability of sorting into the meritocratic pathway increased with gender equality and decreased with socioeconomic development. Socioeconomic development, however, was positively linked to access to *Informal unskilled worker with later marriage* trajectory. Gender equality at the country-level was also negatively associated with the probability of sorting into the *Patriarchal OLF* pathway.

Above and beyond the country-level effects, our results emphasized the importance of local cultural and structural conditions on individuals' life courses. Having more literate adults, public sector and high white-collar workers and less unpaid workers increased at age 9 increased the risk of sorting into the meritocratic pathways (i.e., *Formal high white-collar and late marriage* and *Married OLF after education*) and decreased the probability of having patriarchal life courses (i.e., *Informal agricultural worker and married* and *Patriarchal OLF*). Despite the consideration of these cultural and structural conditions, gender differences in access to specific pathways remained noticeably high as illustrated in Figure 3.

Table 3 Logistic regressions with district and country-level determinants (standard errors in parentheses)

	Formal high-white collar and late marriage	Informal agricultural worker and married	Informal unskilled worker with later marriage	Married OLF after education	Patriarchal OLF
Women	-0.209 ***	-0.160 ***	-0.273 ***	0.302 ***	0.343 ***
	(0.007)	(0.005)	(0.006)	(0.008)	(0.007)
Parent's education (ref: illiterate)					
Reads & writes	0.109 ***	-0.030 ***	-0.042 ***	0.061 ***	-0.094 ***
	(0.010)	(0.008)	(0.008)	(0.010)	(0.009)
Less than intermediate	0.160 ***	-0.054 ***	-0.052 ***	0.061 ***	-0.136 ***
	(0.013)	(0.010)	(0.010)	(0.012)	(0.010)
Intermediate	0.246 ***	-0.060 ***	-0.122 ***	0.030 +	-0.156 ***
	(0.019)	(0.016)	(0.011)	(0.016)	(0.013)
Above intermediate	0.306 ***	-0.103 ***	-0.158 ***	0.040	-0.166 ***
	(0.036)	(0.022)	(0.014)	(0.030)	(0.025)
University	0.362 ***	-0.083 ***	-0.161 ***	-0.037 *	-0.181 ***
	(0.024)	(0.019)	(0.009)	(0.018)	(0.015)
Father's occupation (ref: elementary occupation)					
High white-collar	0.045 **	-0.010	-0.037 **	0.016	-0.042 **
	(0.015)	(0.009)	(0.012)	(0.015)	(0.013)
Low white-collar	-0.009	0.029 *	-0.025 +	0.008	0.001
	(0.016)	(0.012)	(0.014)	(0.017)	(0.015)
Agricultural worker	-0.052 ***	0.112 ***	-0.066 ***	-0.071 ***	0.021 +

	(1)	(2)	(3)	(4)	(5)
	(0.013)	(0.009)	(0.010)	(0.013)	(0.011)
Unskilled manual worker	-0.022 +	-0.017 *	0.042 ***	-0.006	-0.007
	(0.013)	(0.008)	(0.012)	(0.014)	(0.012)
Armed forces	0.068 +	-0.024	-0.027	-0.003	-0.083 *
	(0.036)	(0.028)	(0.034)	(0.036)	(0.036)
Working mother	0.024	0.021	0.002	-0.064 ***	0.021
	(0.016)	(0.015)	(0.015)	(0.014)	(0.016)
Number of siblings	-0.010 ***	0.002 **	0.004 ***	0.000	0.003 **
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Region (ref: Cairo)					
Alexandria	0.021	0.006	-0.023	-0.012	0.026 +
	(0.016)	(0.011)	(0.014)	(0.016)	(0.015)
Urban lower	0.004	0.030 **	0.030 *	0.022	-0.044 **
	(0.015)	(0.010)	(0.014)	(0.016)	(0.014)
Urban upper	0.046 **	0.064 ***	-0.042 **	-0.004	-0.002
	(0.015)	(0.010)	(0.013)	(0.015)	(0.013)
Rural lower	-0.024 +	0.114 ***	-0.035 **	0.004	0.001
	(0.014)	(0.009)	(0.013)	(0.015)	(0.013)
Rural upper	-0.084 ***	0.134 ***	-0.041 **	-0.081 ***	0.094 ***
	(0.015)	(0.010)	(0.013)	(0.015)	(0.014)
Cohort (ref: <1965)					
1965-69	-0.002	0.004	0.028	0.027 +	0.027 +
	(0.015)	(0.012)	(0.015)	(0.016)	(0.014)
1970-74	0.026	-0.004	0.052	0.038	-0.044 +
	(0.026)	(0.019)	(0.024)	(0.026)	(0.024)
1975-79	0.027	0.006	0.065	0.050	-0.046
	(0.038)	(0.028)	(0.033)	(0.039)	(0.034)
>1979	0.023	-0.003	0.070	0.073 +	-0.052
	(0.038)	(0.028)	(0.034)	(0.040)	(0.034)
Gender equality	0.320 +	-0.095	0.034	0.144	-0.382 *
	(0.186)	(0.136)	(0.154)	(0.185)	(0.151)
Log(GDP)	-0.085 ***	0.005	0.048 **	0.020	0.009
	(0.021)	(0.016)	(0.018)	(0.024)	(0.019)
District scale	0.146 *	-0.340 ***	0.035	0.211 ***	-0.326 ***
	(0.069)	(0.071)	(0.064)	(0.071)	(0.068)
N	12,076	12,076	12,076	12,076	12,076

Source: Egypt Labor Market Panel Survey (ELMPS) 2012; +p<0.10, *p<0.05, **p<0.01, ***p<0.001

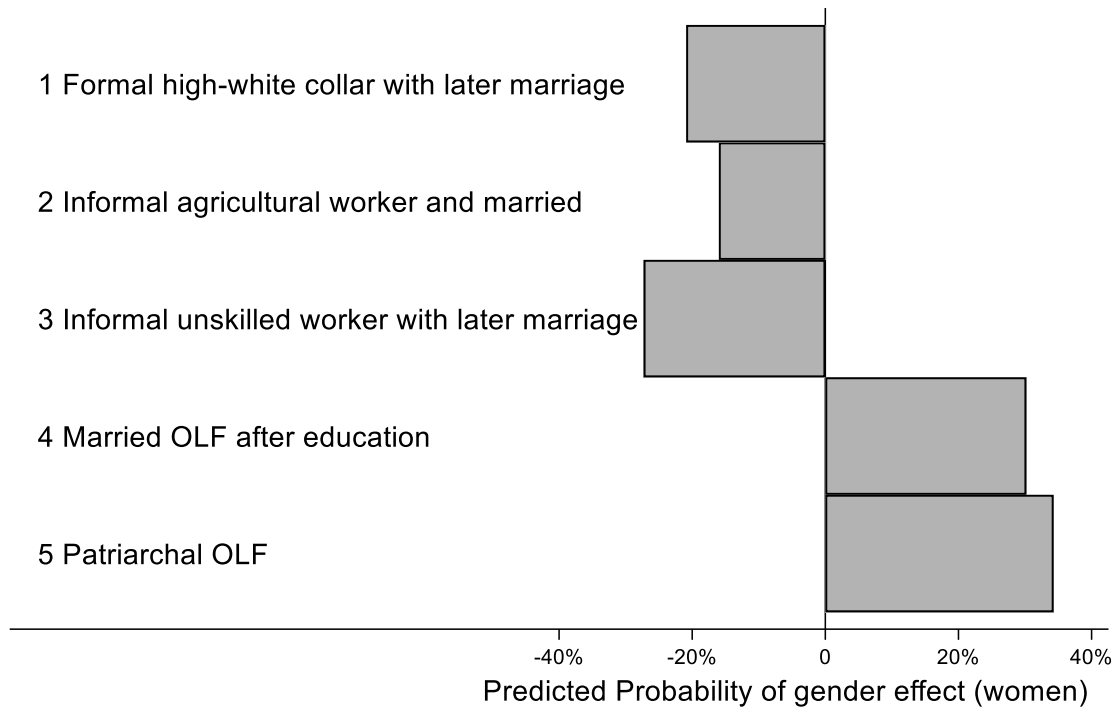*Figure 3 Predicted probability of gender effects*

In additional robustness checks (not shown), we first replicated the analyses by using the Treiman's (1977) international prestige scale to have a consistent job definition across ages and periods, as it has been found most comparable across countries and historical periods (Hout and DiPrete 2006). Second, we tried alternative specifications including substation costs derived from transition rates between two states (Gabadinho et al. 2011) and dynamic hamming distance (Lesnard 2010). Third, although fertility history was available for married women aged between 15 and 49, we were able to extend this range to older ages for men as noticeable spousal age differences exist in Egypt. Accordingly, men were relatively over-represented in our sample in the older cohorts. We replicated the analyses by excluding these older cohorts. Our main findings were qualitatively robust to these alternative specifications.

In addition, we replicated the analyses separately for men and women and by distinguishing between father's and mother's education. Overall, results were very similar to the main findings with the exception that parental education influenced sorting into the *Married OLF after education* positively for women and negatively for men. Moreover, the influence of father's education on individuals' life courses was more significant and stronger both for men and women in comparison to mothers' education.

Conclusion

Despite women's increasing schooling, Egyptians work and family life courses deviate from the predicted patterns of DTT, SDT, and modernization theory. Women's involvement in the economy is decreasing (Assaad and Krafft 2015) and fertility levels are increasing (Krafft 2016) in contrast to improvements in the standard of living, education, and health. Understanding the interplay between work and family life courses becomes important in such a setting with high levels of gender equality and atypical work-family life-course patterns. So far, studies have adopted a unidirectional approach that examined "point-in-time-outcomes" by assessing the impact of employment events on family outcomes or vice versa to elicit the interplay between work and family life events (e.g., Krafft 2016; Spierings and Smith 2007).

In this study, we investigated work and family life courses from childhood to early adulthood using unique ELMPS which holds information on work and family histories of Egyptian men and women. We questioned the typical life courses in Egypt, gender differences in access to these life courses and other cultural, structural, and familial conditions explaining sorting into specific life courses.

Our multichannel sequence and cluster analyses outlined 5 typical work and family trajectories for Egyptian men and women with very high levels of gender polarization that

was mainly characterized by the employment patterns. While women were noticeably more likely to be involved in life courses that involve no participation in the labor force, men were more likely to sooner or later had jobs with diverse occupational prestige.

Patriarchical pathways (i.e., *Informal agricultural worker and married* and *Patriarchal OLF*) characterized by early dropouts in education followed by child labor for men and being out of the labor force for women until age 30s were more common among older generations. Yet, younger generations had lower access to the meritocratic pathway in which individuals start working at high white-collar jobs after higher educational attainment. Conversely, women from younger cohorts were likely to remain out of the labor force after marriage and men of younger cohorts were likely to work in unskilled jobs after education.

One common explanation of these trends is the changes in opportunity structure: In Egypt, sectors, where women were traditionally employed, are on the decline, whereas non-export sectors such as construction are increasing due to the oil-revenue based economies (Ross 2008). It is possible that the improvements in economy and standard of living per se neither create sufficient opportunities for more educated new generations nor trigger access to meritocratic pathways in Egypt as it is in many Western countries. Accordingly, the consequences of development on individuals' life courses may differ by context. Indeed, socioeconomic development was negatively associated with access to the meritocratic pathway (i.e., *Formal high white-collar worker and late marriage*) in Egypt. Contrarily, gender equality and local cultural and structural characteristics such as share of white-collar and public workers at the childhood had positive consequences for transition to meritocratic pathways. Furthermore, these local conditions were important in the transition from the patriarchal pathways to more educated and egalitarian pathways.

Our analyses further revealed the importance of family on individuals' life courses in Egypt The patriarchal pathways associated with early family formation and drop out of

education complemented by informal child labor for men and remaining out of the labor force for women were strongly linked to low parental education. Moreover, individuals with agricultural worker fathers were likely to drop out of education and start working in informal agricultural jobs at a very early age. Conversely, the risk of working as an unskilled worker increased when fathers also have unskilled jobs. These findings underline the poverty trap in Egypt (Wahba 2006).

Parental education played an important role for men in access to the meritocratic pathway, namely *Formal high white-collar worker and late marriage*. This is in line with Assaad and Krafft (2014) who show socioeconomic background as an important factor in the transition to a first formal job and privileged jobs even for highly educated youth. Women with highly educated parents were more likely to be involved in *Married OLF after education* and *Formal high white-collar worker and late marriage* pathways. Both groups had higher educational attainment. Yet, the former remained out of the labor force after forming a family, whereas the latter remained single with employment in formal white-collar jobs. This suggests that policies aiming to reconcile work and family life courses increase women's integration in the economy which is crucial for economic growth and development (Moghadam 1998).

Although we included many parental and other background factors, it should, nevertheless, be noted that the older cohorts included in the analyses may contain more individuals who are privileged within their own generations as these individuals are more likely to live longer (Lutz and Kebede 2018). Moreover, information on different types of marital arrangements including extended families and blood relations was only available for married individuals aged between 18 and 39. Such arrangements thereby were not included in our analyses as this would noticeably limit mapping the social change in Egypt. Focusing only on newer cohorts will enable researchers to see whether these arrangements have consequences for individuals' life courses. Lastly, panels with the same setting are carried out

by the Economic Research Forum (ERF) also in Jordon and Tunisia. Subsequently, this information allows researchers to identify the work-family life courses and it will be interesting to examine individuals' work and family life courses in these settings, especially in Tunisia where gender equality is notably higher in comparison to Egypt and Jordan (World Economic Forum 2017).

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Appendix

Tables

Table A1 Main predictors

Variable	Mean	Std. Dev.	Range	N
Women	0.45		0-1	12,076
Parent's education				
Illiterate	0.54		0-1	12,076
Reads & writes	0.19		0-1	12,076
Less than intermediate	0.13		0-1	12,076
Intermediate	0.07		0-1	12,076
Above intermediate	0.02		0-1	12,076
University	0.05		0-1	12,076
Father's occupation				
High white-collar	0.22		0-1	11,822
Low white-collar	0.08		0-1	11,822
Agricultural worker	0.39		0-1	11,822
Unskilled manual worker	0.18		0-1	11,822
Elementary occupation	0.12		0-1	11,822
Armed forces	0.01		0-1	11,822
Working mother	0.06		0-1	11,822
Number of siblings	5.69	2.81	0-25	12,072
Region				
Cairo	0.12		0-1	12,076
Alexandria	0.09		0-1	12,076
Urban lower	0.12		0-1	12,076
Urban upper	0.15		0-1	12,076
Rural lower	0.29		0-1	12,076
Rural upper	0.24		0-1	12,076
Cohort				
<1965	0.15		0-1	12,076
1965-69	0.17		0-1	12,076
1970-74	0.19		0-1	12,076
1975-79	0.28		0-1	12,076
>1979	0.21		0-1	12,076
Gender equality	0.42	0.03	0.36-0.47	12,076
Log(GDP)	23.8	0.66	22.32-24.48	12,076
District scale	0.14	0.06	0.02-0.05	12,072

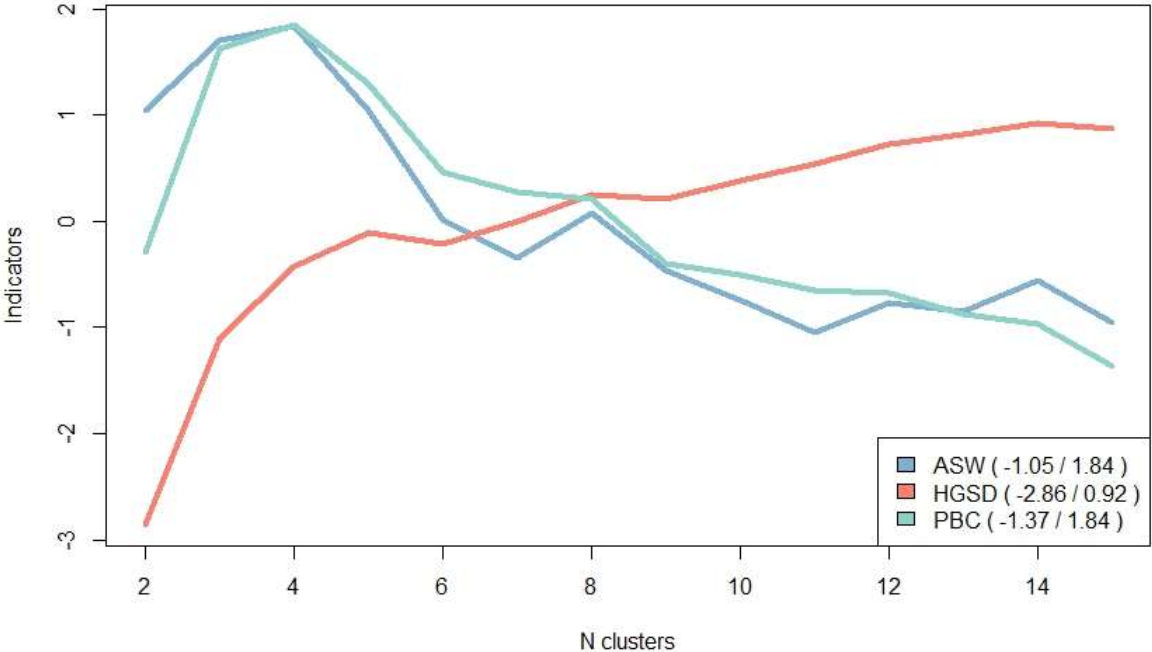Source: Egypt Labor Market Panel Survey (ELMPS) 2012.

Figures

Figure A1 Cluster cut-off criteria

Formal high-white collar worker and late marriage

Informal agricultural worker and married

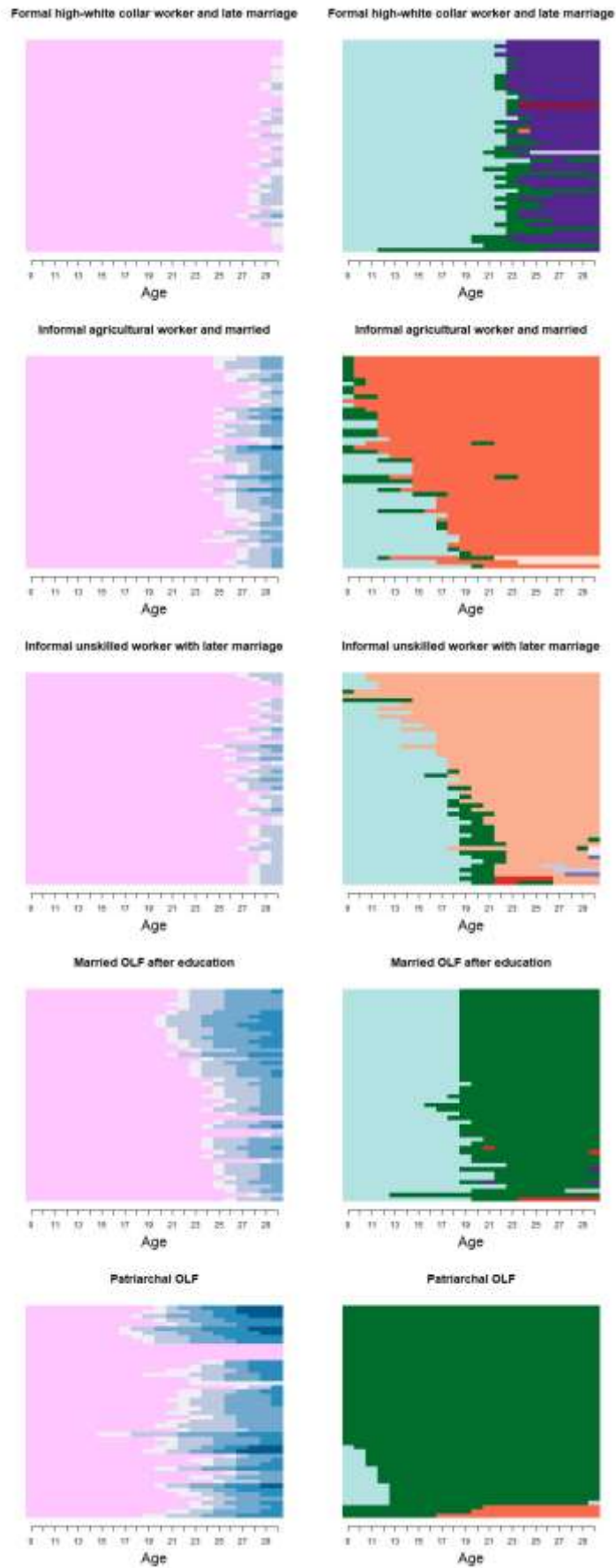Informal unskilled worker with later marriage

Married OLF after education

Patriarchal OLF

Figure A2 Relative Frequency Plots

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