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Article — Published Version

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Population and Development Review

Provided in Cooperation with:

John Wiley & Sons

Suggested Citation: Buyukkececi, Zafer; Fasang, Anette Eva; Kraus, Vered (2023) : Rising Patriarchy and Declining Economic Opportunity: Life Courses and Social Change in Egypt between 1965 and 2018, Population and Development Review, ISSN 1728-4457, Wiley, Hoboken, NJ, Vol. 49, Iss. 3, pp. 561-598, <https://doi.org/10.1111/padr.12578>

This Version is available at:

<https://hdl.handle.net/10419/288117>

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Rising Patriarchy and Declining Economic Opportunity: Life Courses and Social Change in Egypt between 1965 and 2018

ZAFER BUYUKKECECI , ANETTE EVA FASANG AND VERED KRAUS

Despite Egypt's economic growth and educational expansion, gender inequalities and a lack of economic opportunities for young adults persist. Existing studies on social change in Egypt often rely on aggregate trend indicators or focus on isolated point-in-time work or family outcomes. This study adopts a life course perspective to (1) trace cohort changes in work-family life courses for individuals born between 1956 and 1988 (N = 19,970) from 1965 to 2018, (2) assess gender inequality trends in life courses across cohorts, and (3) link different life course patterns to aggregate development indicators. Using retrospective data from the Egyptian Labor Market Panel, multichannel sequence and cluster analyses identify ten typical life course profiles that can be divided into: a state-structured life course; and various manifestations of family- and market-structured life courses. The economically secure state-structured life course declined in favor of rising market-structured and family-structured life courses. Gender inequality in employment increased across cohorts. GDP growth was associated with economically insecure market-structured life courses for men and family-structured life courses of economic inactivity for women. Cohort change in life courses was most rapid in the transition period from authoritarian socialism to unregulated crony capitalism (1980–1990) when cohorts born in the 1970s reached adulthood.

Introduction

Key human development indicators show significant progress in the Middle East and North Africa (MENA) region in recent decades. Life expectancy, educational attainment, and living standards increased drastically,

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maternal and infant mortality declined (World Bank 2013). The region also experienced the fastest educational expansion in the world between 1990 and 2010 (UNESCO 2011). Yet, female and youth employment remained persistently low (Gebel and Heyne 2014; Spierings et al. 2010). MENA countries still rank at the bottom on gender inequality indicators, including employment and political empowerment (World Economic Forum 2017). Persistently low female and youth employment challenge common interpretations that equate economic development with increasing formal employment, prosperity, gender equality, and declining fertility (Anderson and Kohler 2015; Buyukkececi and Engelhardt 2021; Inglehart and Norris 2003).

Studies on social change in Egypt and the MENA region typically rely on nationally representative aggregate trend indicators, such as total fertility rates and the GDP (Buyukkececi and Engelhardt 2021; El-Haddad 2020), or present rich qualitative ethnographic profiles comparing specific villages or neighborhoods at different time points (Ibrahim 2021; Wickham 2002). Our study bridges these either strongly macro- or microlevel approaches by exploiting a nationally representative panel survey that allows us to adopt a life course perspective on social change through the succession of birth cohorts with distinct individual life course experiences (Fasang, and Mayer 2020; Mayer 2009; Ryder 1965). The life course approach to social change offers a dynamic microlevel foundation of aggregate trends in economic and family indicators by (1) conceptualizing life courses as the combined occurrence, timing and sequencing of work and family events from early to middle adulthood, and (2) tracking change in individual life courses in the succession of birth cohorts. Building on the life course paradigm and the demography of global family change (Furstenberg 2019; Ruggles 2012; Pesando 2019), our theoretical framework further elaborates how predictors on the macro- and meso-level interact to generate cohort change in life courses.

Specifically, we ask: (1) How have typical work and family life courses changed across birth cohorts in the past six decades in Egypt? (2) Did gender inequality in work and family life courses increase across cohorts in this time period? (3) How were aggregate indicators of development associated with men and women's typical life course experiences? The life course approach to social change through cohort replacement has several advantages. We present a continuous account of social change, that is not restricted to a few time points with long gaps between them. This allows us to identify nonlinear speeds of social change, when life course change is particularly rapid between specific birth cohorts. In addition, we map a nationally representative picture of social change in individual lives as they unfold over time and can directly link cohort change in life courses to aggregate indicators of development.

Data from the Egyptian Labor Market Panel Survey (ELMPS) allow us to reconstruct retrospectively collected work and family life courses between ages 9 and 30 for the cohorts born in 1956–1988 that were observed between 1965 and 2018. Multichannel sequence and cluster analyses identify a typology of work–family life courses that is linked to cohort change and GDP with regression methods (research questions 1 and 3) (Pollock 2007; Studer 2013). To address research question 2, gender inequality in life courses is measured with the recently developed Bayesian Information Criterion (BIC) and Likelihood Ratio Test (LRT) for sequence comparison that allows quantifying the degree of difference between men and women’s work and family life courses across successive birth cohorts (Liao and Fasang 2021).

Numerous studies document high youth unemployment, declining returns to education and a religious revival including a resurgence of gender conservative norms in the MENA region (Moghadam 2020; Wickham 2002). We contribute to this literature with a life course approach to social change through cohort replacement by establishing typical gendered life course profiles in different phases of Egypt’s post-independence political and economic development using high quality microlevel panel data.

Social change from a life course perspective

Core principles of the life course paradigm (Bernardi, Huinink, and Settersten 2019; Elder, Johnson, and Crosnoe 2003) hold that (1) macrostructural contexts shape the temporal sequencing of work and family lives, (2) work and family lives mutually influence one another dynamically over time, and (3) social change occurs through the replacement of birth cohorts, that is, new birth cohorts encounter different opportunity structures that shape distinct life course experiences.

Institutionalist life course approaches assume that specific macrostructural political, economic and normative conditions channel men and women into a few likely life course trajectories, while hindering others (Studer 2021). Core macrostructural features include (1) the type and degree of state intervention, (2) modes of economic production, and (3) gender regimes and family norms (Aisenbrey and Fasang 2017; Leisering 2003; Mayer 2005). The life course paradigm emphasizes that macrostructural conditions, social networks and individual agency jointly shape the timing and sequencing of life transitions (Bernardi, Huinink, and Settersten 2019). Welfare state scholars highlight the varying importance of the state, the market, and the family in regulating and securing life transitions across countries and historical periods (Esping-Andersen 2002). The demography of global family change points out that interacting predictors on the macro-, meso- and microlevels shape family lives (Furstenberg 2019; Pesando 2019). In this study, we focus on the relative importance of macro- (state,

TABLE 1 Hypotheses: Three periods of macrostructural change and expected life course types

	I. Statist Authoritarian Socialism	II. Unregulated Crony Capitalism	III. Structural Adjustment and Political Instability
Time	1952–1970	1971–1990	1991–2018
Political leader	Nasser	Sadat, Mubarak	Mubarak, Mursi, Sisi
(1) State intervention	Strong active life course policies	Ineffective active life course policies	Passive life course policies
(2) Mode of economic production	Centrally planned, public-sector and agriculture dominated	Transition to unregulated crony capitalism	Structural adjustment, state withdrawal, mature crony capitalism
(3) Gender regime	Rural: domestic patriarchy Urban: more egalitarian	Transition to neo-patriarchal public gender regime, domestic patriarchy in rural areas	Neo-patriarchal public patriarchy
Typical Life Courses	Hypothesis 1a Dualization: State-structured life course (SSL) Agricultural family-structured life course (FSL)	Hypothesis 1b Rise of market- structured life course (MSL) Decline of State-structured life course (SSL) Persistence of Family- structured Life Course (FSL)	Hypothesis 1c Dualization: Men: Market- structured life course (MSL) Women: Family- structured life course (FSL)

NOTE: We do not distinguish a separate period after the Arab Spring, because the lack of economic opportunities for the majority population, high youth unemployment and poverty remained largely unchanged. Our observation period covers only a few years after the uprisings during which we observe too few cases for only short durations of their life courses.

SOURCE: Zaki (2001), Moghadam (2020), Wickham (2002), El-Haddad (2020), and Assaad and Krafft (2015).

market) and meso- (family) level factors for structuring work–family life courses across birth cohorts. For example, if effective state policies do not exist, either the market, or family and kinship networks become more important in shaping school-to-work transitions and family formation. Next, we briefly introduce general theoretical considerations from life course theory, before applying them to Egypt (Table 1).

- (1) *State intervention*: States structure life courses through market rules, legal systems and welfare entitlements that support and guide individual transitions, for example from school to work (Mayer and Schöpflin 1989). Active life course policies (Leisering 2003) deliberately seek to structure life courses by means of political and governmental intervention, for example by conditioning access to occupations on educational

certificates. Passive life course policies intentionally leave the formation of life courses to market forces or private networks within families or local communities.

- (2) *Modes of economic production* structure life courses by defining in which sectors, public or private, how many vacancies are available, and by regulating access to positions (Mayer 2005). Open employment relationships grant easy access to positions without formal certification and weak employment protection typically leads to eventful and interrupted work lives. Closed employment relationships denote the opposite—restricted access to positions through high employment protection leading to stable employment lives for protected insiders, but durable labor market exclusion for outsiders, typically women (Lersch, Schulz, and Leckie 2020). In Europe and North America in the 1950s and 1960s, Fordist industrial mass production and closed employment relationships shaped a “Fordist” life course regime (Mayer 2005), in which major life transitions were regulated, secured by the state, and strongly center around work for men, and the family for women. Since the 1970s, globalization, skill-biased technological change, recession related to the oil crises, and a shift toward post-materialist values gave rise to a “Post-Fordist” life course regime of less standardized and more unstable work lives along with delayed family formation (Brückner and Mayer 2005). Yet, empirical evidence for the Post-Fordist life course is mixed and documents only moderate increases in employment instability (Van Winkle and Fasang 2021). The Post-Fordist life course regime neglects that declining economic opportunities do not necessarily entail more eventful life courses. On the contrary, once economic opportunities fall below a certain threshold, young adult lives may come to a halt in extended periods of “Waithood” (Honwana 2012; Inhorn and Smith-Hefner 2021; Singerman 2021). Expected life transitions, such as leaving the parental home, entering the labor market and establishing a family are delayed or prevented. Waithood is rising in low- and middle-income countries as the MENA region, where educational expansion and privatization have not improved formal employment, and materialistic and gender conservative values prevail (Singerman 2021).
- (3) *Gender regimes* (Pascall and Lewis 2004; Walby 2020) are systems of interrelated gendered institutions in politics, the economy, civil society, and regulations on violence that channel men and women into distinct life trajectories. The public sector plays a crucial role for lowering gender inequality in employment (Assaad, and Arntz 2005; Assaad, and Barsoum 2019) along with accessible formal sector jobs, work-reconciliation policies, such as public child care and parental leave, and norms that support mother’s employment (Zagel and Van Winkle 2020), all of which are weak in MENA countries (Barsoum 2016, 2019). Based on Walby (2020), Moghadam (2020) distinguishes a

domestic gender regime dominated by private patriarchy in families from public gender regimes given by the patriarchy of the state. Domestic patriarchy prevails in economically weak peripheral areas of the MENA region. Most urban centers have transitioned to public patriarchy since the 1950s. Neo-patriarchy entails two seemingly contradictory parallel developments “(i) the expansion of industrialization, urbanization, proletarianization, and state-sponsored education, which undermines patriarchal family authority; and (ii) the retention of Muslim family law, which legitimates the prerogatives of male family members over female family members” (Moghadam 1993, 111). In neopatriarchal regimes in the MENA region unregulated rentier capitalism undermined women’s employment opportunities, despite educational expansion. Combined with a resurgence of conservative family laws, state withdrawal in favor of unregulated rentier capitalism limited women’s employment and confined them to family roles (Moghadam 2020).

Life courses in three periods of macro-structural change in Egypt

Studies on cohort change or cross-national differences in combined work–family life courses recently proliferated across affluent democracies in the Global North (e.g., Aisenbrey and Fasang 2017; Comolli, Bernardi, and Voorpostel 2021; Sirniö, Kauppinen, and Martikainen 2017). Studies on individual longitudinal life courses in low- and middle-income countries including the MENA region are scarcer and tend to either focus on only the family domain (e.g., Pesando et al. 2021), examine combined work and family statuses at a single time point (e.g., Grant and Furstenberg 2007), or aggregated trends in family configurations defined on the household level (e.g., Castro Torres, Batyra, and Myrskylä 2022; Pesando 2019). Cohort changes in life courses are the microlevel dynamics underlying aggregate family and labor market trends.

For the MENA region, Dhillon and co-authors (2009) used aggregated cross-sectional data to postulate three ideal-typical life courses: the traditional life course, the welfare state life course and the post-welfare state life course. The *traditional life course* (Dhillon and Yousef 2009) transitions into adulthood early, with rudimentary education and few economic opportunities. Effective state policies do not exist and markets are underdeveloped. Lacking effective macrostructural institutions, meso-level family networks become strong regulating forces of life courses. Men work in family farms and women are largely confined to family and household responsibilities. The *traditional life course* prevailed in Egypt when British occupation ended (1956) but declined with independent state building and economic development giving rise to the *welfare state life course* (Dhillon and Yousef 2009). State institutions that provide free education, stable

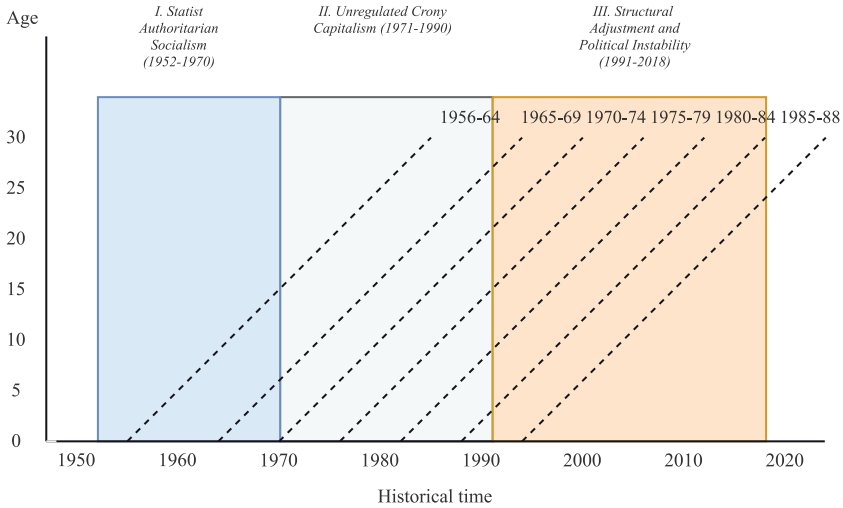
government employment, and social protection expanded in Egypt in the 1960s and 1970s and shaped the *welfare state life course* (Dhillon and Yousef 2009). Oil revenues, emigrant workers remittances and foreign aid initially enabled state expansion, which became financially unsustainable with rising demographic pressure and economic crises since the mid-1980s. Structural adjustment programs followed, along with an uneven and poorly orchestrated dismantling of the public sector. Subsequently, Dhillon and Yousef (2009) envision a *post-welfare state life course* with successful careers that effectively respond to private sector incentives where access to capital grants the material pre-conditions for family formation (p. 16). The authors contend that at the time of their writing in 2009, this *post-welfare state life course* was yet to emerge, because the transition from a state-run to a private market dominated economy was stalled, essentially leaving young adults “a generation in waiting” (Dhillon and Yousef 2009).

We extend life course research from Europe and North America building on the three ideal-type life courses of Dhillon and Yousef (2009) for the MENA region. Our study goes beyond Dhillon and Yousef (2009) in four key respects. (1) We theoretically elaborate social change from a life course perspective as cohort change in longitudinal individual-level work and family life courses. This allows us to show nonlinear patterns of social change by identifying birth cohort groups for which life courses changed most rapidly. (2) Empirically, we go beyond the descriptive aggregate evidence in Dhillon and Yousef (2009) by using longitudinal microlevel data and recent sequence analysis tools to (3) quantify the extent of gender inequalities in life courses across cohorts, and (4) directly link cohort change in life courses to aggregate indicators of economic development.

Specifically, we distinguish a *family-structured life course* (FSL), *state-structured life course* (SSL), and *market-structured life course* (MSL). The *FSLs* and *SSLs* map on closely to the traditional and welfare state life courses in Dhillon and Yousef (2009). In contrast to their vision of an economically prosperous post-welfare state life course, we assume that economically precarious *MSLs* increased for men, while *FSLs* increased for women across cohorts in chronically malfunctioning unregulated private markets.

Furthermore, we distinguish three broad periods of macrostructural change in Egypt that capture overarching developments of state retrenchment, a rise of private markets, and continuing importance of family and kinship networks (Table 1): (I) Statist Authoritarian socialism in the Nasser era (1952–1970), (II) the transition to Unregulated Crony Capitalism under Sadat and Mubarak’s first decade (1971–1990), and (III) Structural Adjustment and Political Instability with the Arab Spring uprisings (1991–2018). Any periodization can be contested. The three periods proposed here overlap with previous studies (Dhillon and Yousef 2009; Wickham 2002; Ibrahim 2021) and should be understood as broad orientations with fuzzy boundaries. The Lexis diagram in Figure 1 shows at which ages

FIGURE 1 Lexis diagram locating study cohorts in periods of macrostructural development



our study cohorts transitioned through the three periods. Several cohorts travel across multiple periods throughout their life courses reflecting the continual flow of social change through cohort replacement (Ryder 1965). Below, we present macrostructural changes in the three periods and specify corresponding expectations about cohort change in typical life courses (research question 1, Hypotheses 1a–1c, Table 1).

Statist Authoritarian socialism (1952-1970): Dualization of family-structured and SSLs

- (1) *State intervention:* The Nasser regime (1956–1970) of strong authoritarian state intervention has been termed the “Authoritarian bargain” (Ibrahim 2021), “Authoritarian Populism” (Wickham 2002), or the “Populist-Authoritarian social contract” (El-Haddad 2020). Mainly in urban areas, strong active life course policies regulated life courses by promoting free and universal education, public sector job guarantees for college graduates, and family planning and contraception (Binzel and Carvalho 2016; Smith 2018). In rural areas, meso-level family networks and local communities continued to strongly regulate life courses.
- (2) *Mode of economic production:* The economy was centrally planned, mainly agricultural in rural areas, and dominated by the public-sector in urban areas—a “state-led development model, in which the state produced, managed, and distributed goods and services to its population” (El-Haddad 2020). The private sector was restricted to agriculture, real estate, and the informal economy and mostly provided informal work without contracts or benefits. Public sector jobs with closed

employment relationships and high job security increased drastically with mounting costs for the state (Ayubi 1980; Waterbury 1983). Toward the end of the Nasser era and with the defeat in the 1967 Six-day War, public sector salaries began to decline, and waiting periods increased, paving the way for economic reforms.

- (3) *Gender regime*: The gender regime was polarized between traditional domestic patriarchy in rural areas, and moderate economic opportunities for women in urban areas granted by educational expansion, public sector employment and family planning (Assaad and Barsoum 2019; Hoodfar 1997; Moghadam 2020; Smith 2018).

Typical life courses: We expect a dualization between a SSL in urban areas and a FSL in rural areas (Hypothesis 1a, Table 1). The SSL will be characterized by education directly followed by secured public sector employment (Figure 1), similar to the welfare state life course (Dhillon and Yousef 2009). Active life course policies and closed employment relationships channel major life transitions similar to the Fordist life course regime (Mayer 2005). Family lives adhere to norms of first completing education and securing employment before marriage and parenthood, with moderate fertility consolidated by the family planning program. The SSL is likely for men, and to a lesser extent, for women born between 1956 and 1965 in urban areas, who benefited from public sector job guarantees (Binzel and Carvalho 2016). In contrast, individuals in resource poor rural areas continued to be strongly confined within family networks and local religious groups where female employment and family planning are rejected and high and early fertility is promoted (Smith 2018). The FSL in rural areas resembles the traditional life course (Dhillon and Yousef 2009). After short basic education men enter informal, low-paid work, usually in agriculture, or a family business. Women combine early family formation and high fertility with economic inactivity or unpaid family work.

Transition to unregulated crony capitalism (1971-1990): Rise of MSLs and FSLs, decline of the SSLs

- (1) *State intervention*: During Sadat's rule (1970-1981) the authoritarian socialist regime initially continued, but increasingly failed to deliver, opening possibilities for economic liberalization and gradual state withdrawal (Ibrahim 2021). This period has been termed the "unsocial contract" that fully matured in the 1980s (El-Haddad 2020). The "authoritarian bargain" factually collapsed during Mubarak's first decade (i.e., 1981-1991) with deteriorating state services, such as education and health care, leaving a void that was in part filled by family and kinship networks or parallel services provided by Islamists and the Muslim Brotherhood (Assaad, and Arntz 2005; El-Haddad 2020; Ibrahim 2021;

Wickham 2002). Active life course policies of public sector job guarantees still nominally existed but were no longer effective, resembling a situation of passive life course policies that relegated the formation of life courses to meso-level networks and an unregulated emerging market (Binzel and Carvalho 2016).

- (2) *Mode of economic production*: Public sector opportunities declined but were not replaced by formal private sector employment. Instead, state withdrawal gave way to crony capitalism in which public goods were transformed to private gains of small elites (El-Haddad 2020). Sadat's 1974 open door policy to increase private and foreign investment (Loewe 2013; Waterbury 1985) marked the transition to market capitalism but lacked a regulatory framework. The economy initially grew mainly due to windfall gains from oil revenues, workers' remittances, Suez Canal revenues, and tourism. A prolonged economic recession followed the 1982 collapse of oil prices, total debt skyrocketed and public sector employment and wages plummeted (Loewe 2013). Slowly, opportunities opened up in the private sector in petroleum, banking, construction, and trade, typically informal without contracts or benefits. The economy shifted from export-oriented sectors, such as agriculture and manufacturing, to nonexport-oriented sectors, mainly construction and services. Overall, growing cohorts of labor market entrants faced limited employment opportunities as the remaining positions in the shrinking public sector were filled by their parent generations.
- (3) *Gender regime*: Public sector retrenchment and the resurgence of gender conservative values depressed women's employment (Assaad, and Arntz 2005). Growing private sectors were generally deemed unsuitable for women, because they often required physical strength, expected long and nonstandard work hours, or long commuting times that were incompatible with women's domestic responsibilities and prevailing gender norms (Barsoum 2010). Prolonged waiting times between education and employment, and increasing unemployment delayed men's family formation, and restricted the pool of economically marriageable men for women. In rural areas, domestic patriarchy persisted. In urban areas the growing influence of Islamic movements buttressed a conservative neo-patriarchal public gender regime (Moghadam 2004; Wickham 2002).

Typical life courses: In the transition to unregulated crony capitalism, we expect a rise of *MSLs*, a decline of the *state structured life course* and a persistence of *family structured life courses* (Hypothesis 1b, Table 1). Specifically, a new neo-patriarchal division between a male *MSL* and a female *state-family-structured life course* (S-FSL) will begin to emerge. The male *MSL* is characterized by state-funded education, followed by waiting periods before entering informal private sector work coupled with delayed family

formation. The prevalence of informal jobs in manufacturing, service, and construction will vary with shifting sizes of these sectors over time. The neo-patriarchal female S-FSL is characterized by state-funded education followed by economic inactivity. The family will be the main force structuring their life courses after state-funded education. If women secure an economically marriageable husband, they will marry early after completing education and have many children adhering to rising conservative Islamist values. Given the rising shortage of economically secure men, some will remain economically inactive, unmarried and childless, confined to widowhood in their family or origin.

Structural adjustment and political instability (1991-2018): Dualization of male market-structured and female state-family structured life courses

- (1) *State intervention*: Intensifying economic crises in the 1980s prompted the International Monetary Fund (IMF) and World Bank to request structural adjustments reforms starting from 1991 (Ibrahim 2021; Binzel and Carvalho 2016; Zaki 2001). The Economic Reform and Structural Adjustment Program (ERSAP) further reduced state involvement through liberalization and privatization by promoting exports and allowing external competition. ERSAP intentionally introduced passive life course policies leaving the formation of life courses to the market. Yet, much of the initial economic growth did not increase formal employment or reduce poverty, and was not sustainable in the long term (Loewe 2013). Instead of the market, families and Islamic organizations gained importance in structuring life courses (Singerman 2021; Moghadam 2020; Wickham 2002). Resulting frustrations among educated unemployed youth and a favorable opportunity structure for protest are seen as the main drivers of the Arab Spring in 2011 (Binzel and Carvalho 2016; Wickham 2002). After a brief period of great political uncertainty (2011–2013), the Sisi regime installed a revised version of the “Authoritarian bargain” with large infrastructure programs to provide employment in exchange for a crack-down on political freedoms, a resurgence of military power and continuing crony capitalism (El-Haddad 2020; Ibrahim 2021).
- (2) *Mode of economic production*: Following the IMF and World Bank interventions (1991–1998), about one-third of state-owned enterprises were privatized. Exports and GDP initially increased (El-Haddad 2020; IMF 2007). Yet, the quality and quantity of jobs did not improve due to a bias toward fast-growing and against labor-intensive sectors (Loewe 2013). Manufacturing exports stagnated and declined after 2003. In 2004, new reforms accelerated privatization and public sector employment was frozen. Subsequently, Egypt was hit hard by a series of economic shocks, including the global food and financial crises following 2008. A few

families continued to control the economy through direct ownership and political connections. The economic crisis associated with the 2011 uprising further depressed employment opportunities in a climate of political uncertainty (Assaad and Krafft 2015).

- (3) *Gender regime*: Women's employment opportunities further declined with public sector shrinkage, and rising demographic pressure (Assaad and Krafft 2015; Singerman 2013). Private sector jobs continued to be deemed inappropriate for women. Political instability, high inflation, and benefit cuts further limited women's ability to work, by making their domestic tasks more time intensive (Moghadam 2020). Declining living standards contributed to delay marriage and fertility as young adults were increasingly unable to meet the material preconditions deemed necessary to form a family (Amin and Al-Bassusi 2004; Salem 2015).

Typical life courses: The SSLs and traditional FSLs will continue to decline and a new dualization between the neo-patriarchal male *MSL* and female *S-FSL* will solidify (Hypothesis 1c, Table 1). Women of the youngest cohorts will be more likely to postpone family formation and remain economically inactive, given a lack of job opportunities and shortage of marriageable men. For men, education will be followed by longer waiting periods until they enter informal private sector jobs, with political instability further contributing to delay family formation. *MSLs* in manufacturing likely decline for cohorts born after 1980, because initial growth of tradable manufacturing jobs was short-lived (Alissa 2007). Instead, increasing waiting periods and jobs in the nontradable sectors, such as services and construction are more likely for the youngest cohorts (El-Haddad 2020).

Implications for cohort change in gender inequality in life courses and the association between life courses and economic development

Hypotheses 1a-1c above specify expectations on cohort change in typical life courses (research question 1) that make implicit assumptions about changing gender inequality in life courses (research question 2), and the association between GDP and life course types for the specific political and economic developments in Egypt (research question 3).

Concerning gender inequality, men and women's life courses will become overall less similar despite universal educational expansion (Hypothesis 2). The *de facto* exclusion of women from private sector jobs and the neo-patriarchal gender regime will be visible in work life courses that entail higher gender inequality compared to the more egalitarian SSLs among the oldest birth cohorts. Cohort change in gender inequality in family life courses is less clear. On the one hand, women of younger cohorts might predominantly revert to early family formation and high fertility lacking

employment opportunities, which would increase gender differences in family life courses. On the other hand, rising shares of women of younger cohorts might join men in delayed family formation facing an increasingly restricted pool of economically suitable husbands, which would lead to a convergence of men and women's family life courses across cohorts.

Concerning GDP and typical life courses, the Egyptian model of economic growth suggests adverse life course change with development (Hypothesis 3) due to state withdrawal in favor of unregulated crony capitalism, including public sector retrenchment, and a shift from export-oriented to informal nonexport-oriented private sector work. Specifically, for men rising GDP will be associated with economically precarious *MSLs* coupled with delayed family formation. For women, rising GDP will be associated with life courses of economic inactivity and family responsibilities, despite having higher level of education.

Data and methods

We use two waves (2012 and 2018) of the ELMPS (OAMDI 2019), a rich panel dataset with four waves to date (1998, 2006, 2012, and 2018) conducted by the Economic Research Forum (ERF) together with Egypt's Central Agency for Public Mobilization and Statistics (CAPMAS). Each new wave includes previous and split households, plus a refresher sample. We only use the 2012 and 2018 waves that include all retrospective life course information necessary for our analyses. The 2018 dataset consists of 15,746 households and 61,231 individuals. 79.6 percent of the 2012 wave were successfully re-interviewed and 61.7 percent of the 2006 sample were followed up over three waves (Krafft, Assaad, and Rahman 2021).

We constructed annual work and family trajectories from ages 9 to 30.¹ Substantial proportions of our study cohorts start working and family formation already in their teens (Crandall et al. 2016; Yount, Crandall, and Fai 2018). Individuals aged 15–64 who ever worked provided information about their work history, including education, occupational characteristics, and the start and end dates of each episode. We also include respondents who never worked. The 2012 and 2018 waves cover fertility of ever-married women aged 15–49 and the start and end date of each marriage. Cohabitation and nonmarital fertility are highly uncommon in Egypt and are not captured in the survey. Our study cohorts ranged from 1956 to 1988 covering life courses from 1965 until 2018. After these restrictions, 20,932 individuals could potentially be included in our analysis (see Figure 1).

The work sequences were coded in eight states: (1) outside of labor force, (2) education, and six employment categories based on sector and economic activity: the (3) public sector, private sector jobs distinguished by: (4) agriculture, (5) construction, (6) manufacturing, and (7) service, and an additional category for (8) unpaid agricultural workers, which includes

a small proportion of nonagricultural unpaid workers. Public sector jobs are mostly formal. The vast majority of private sector jobs is informal. Further distinguishing private sector jobs into formal and informal was not feasible due to small case numbers of formal private sector jobs. Our public-private distinction thereby empirically strongly overlaps with a formal-informal distinction.

Fertility is only collected for ever-married women. We obtained men's fertility by linking them to their wives. Men, who reported to be married, but whose wife was not present or could not be identified in the household (472 cases) were excluded. We specified eight family states combining marriage with the number of children: (1) single with no child, (2) separated with no child, (3) separated with children, (4) married with no child, (5) married with 1 child, (6) married with 2 children, (7) married with 3 children, and (8) married with 4+ children. We excluded individuals who had more than five missing values on work (1,384 cases) or family (156 cases) trajectories. For the remaining missing values, we specified a missing value state in the sequences, which comprised 7 percent of the final sample. After these restrictions, our analysis sample consisted of 19,157 individuals.

Methods

We used multichannel sequence analysis (Gauthier et al. 2010; Pollock 2007) and cluster analysis to identify typical life course profiles. Multinomial logistic regression models estimated the probability of sorting into different life course profiles by gender and cohort (research question 1).² Sequence analysis and cluster analysis are used in life course research to identify typologies of trajectories of categorical states (e.g., family trajectories from age 9 to 30). The most common method for sequence comparison in the social sciences is Optimal Matching (OM) (Piccarreta and Studer 2018), a technique derived from biostatistics. OM calculates the distance between two sequences as the "cost" of turning one sequence into another based on three transformation operations: substitution, insertion or deletion of a state that are each assigned a cost by the researcher. The distance is defined by calculating the minimum cost of converting one sequence into another. For recent introductions to sequence analysis, see Raab and Strufolino (2022) and Liao et al. (2022). Multichannel sequence analysis extends this approach to parallel sequences on two or more life domains and groups individuals together who share both similar work and similar family lives. For the work and family domains, we specified constant substitution costs of 2 and indel costs of 1 to ensure that both the timing and order of states contribute to sequence similarity (Aisenbrey and Fasang 2010).

Following best practice conventions, results from ward clustering were entered into partitioning around medoids (PAM) clustering (Studer 2013). To identify the best cluster grouping, we used the average silhouette width

(ASW) that is based on contrasting average within-cluster distances to average between-cluster distances. Silhouette widths reflect the distance of an individual from others within the same group, varying between -1 (lowest coherence) and 1 (highest coherence). Sequences with higher silhouette values are more representative of the main patterns in their cluster. Negative silhouettes denote poorly classified individuals, who could just as easily be sorted into other groups. Accordingly, high ASW values indicate that observations are most similar within their group and most distinct from other groups in a given typology. In our analyses an ASW of 0.25 indicated that the ten-cluster-solution provided the best grouping both in statistical terms and substantively, conforming to the criterion of construct validity (Figure A1 in the Appendix in the Supporting Information). We used the R packages *TramineR*, *TraMineRExtras*, and *WeightedCluster* (Gabadinho et al. 2011; Studer 2013).

In the sequence and cluster analysis, we applied the ELMPS household weights (Krafft, Assaad, and Rahman 2021) that correct for attrition and an oversampling of areas with high migration. The regression models were calculated without weights, because the sampling was unrelated to the dependent variable in our case (Winship and Radbill 1994). Models using weights remained very similar and supported the same substantive conclusions. Gender and cohort entered the multinomial regression models as core predictors along with control variables, including the highest educational degree of any parent, father's occupation, a dichotomous variable indicating, whether the mother was working when the respondent was 15, and the number of siblings. Table T1 in the Appendix (in the Supporting Information) shows all independent variables. We include years of any schooling of the respondent in the description of the clusters but not in the regression models, because education is one of the sequence states. Information on father's occupation is missing for 7.2 percent of our total sample. Moreover, less than 1 percent of our total sample had missing values on the number of siblings, and mother's occupation. For these variables, we used multiple imputation and created 10 imputations for the missing values. Findings were robust to list-wise deletion instead of imputation.

To assess the degree of gender inequality in life courses across cohorts (research question 2), we calculated the BIC and LRT for sequence comparison (Liao and Fasang 2021). The BIC and LRT depart from typical clustering procedures in sequence analysis. Instead, the BIC and LRT quantify the degree of difference between life courses of given groups, in our case between men and women for each cohort. The BIC uses sequence distances from the gravity center, that is, a hypothetical sequence that has the lowest distance to all sequences in a given group, analogous to error terms in regression models when comparing model fit (see Liao and Fasang 2021 for details). To interpret the degree of gender difference in life courses, we follow established thresholds (Kass and Raftery 1995): a BIC of 0–2 denotes a negligible

difference, 2–6 a positive difference, 6–10 a strong difference, and >10 a very strong difference.

To assess the association between GDP and life course types, we included the natural logarithm of GDP at purchasing power parity (PPP) at age 9, when the sequences begin for each individual in the multinomial regressions. We use GDP as an indicator of development because it covers the entire birth cohort range in our analysis. Other indicators of development, such as the Human Development Index (HDI) are only available since 1990. Robustness checks with other indicators of development obtained from the World Bank are reported in the Appendix in the Supporting Information, including life expectancy, gross enrollment rate in secondary education, and a composite measure of these two with GDP that covers our full cohort range and resembles the components of the HDI. In addition, we considered infant mortality as an indicator of development. Results using all of these indicators remain very similar and support the same conclusions.

Results

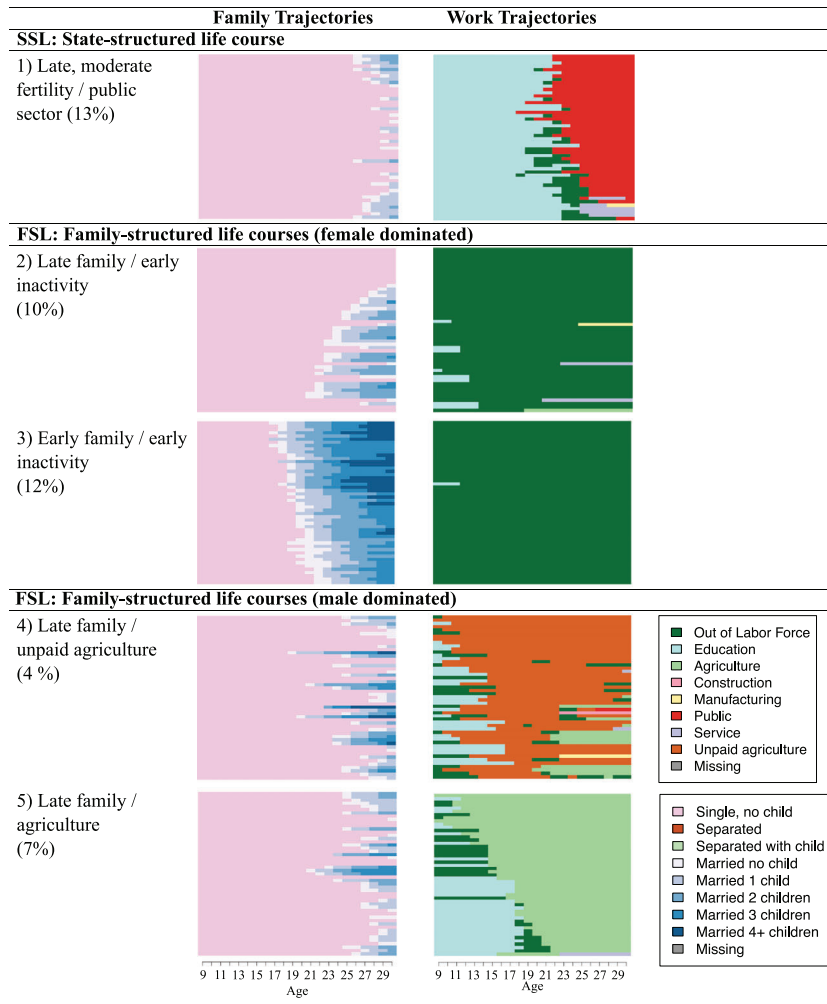
How have typical work and family life courses changed across cohorts?

Hypotheses 1a–1c on life course change across cohorts (Table 1) are jointly informed by the life course types (Figures 2 and 3), descriptive statistics (Tables 2 and Table 3, Figure 5) and predicted probabilities (Figure 4) to experience each work–family life course profile net of controls, calculated by adding an interaction term between gender and cohort in the multinomial regression model (Table 4). Table 4 shows marginal effects on the probability of experiencing each work–family life course type using the SSL as the baseline category. Figure 5 and Table 3 show raw cohort percentages in broader categories of life course types, the SSL, traditional FSL, educated S-FSL, and new *MSLs* across cohorts.

Overall, cohort change in life courses tells a story of educational expansion coupled with declining labor market opportunities due to public sector retrenchment and a slow transition to unregulated market-based capitalism. In line with expectations (Hypotheses 1a–1c, Table 1), *SSLs* and *FSLs* were most common in the initial period of authoritarian socialism (Figures 4 and 5). Their prevalence declined with a gradual rise of *MSLs* and S-FSLs during the transition to unregulated crony capitalism. This neopatriarchal life course division solidified in the third period of structural adjustment and political instability. The majority of men (50 percent) born after 1980 experienced a *MSL*, and the majority of women (62 percent) a S-FSL of education followed by economic inactivity (Figure 5, Table 3).

Figures 2 and 3 show relative frequency (RF) sequence plots of each of the 10 life course types (Fasang and Liao 2014) (state distribution plots in Figure A2 in the Appendix in the Supporting Information). Figure 2

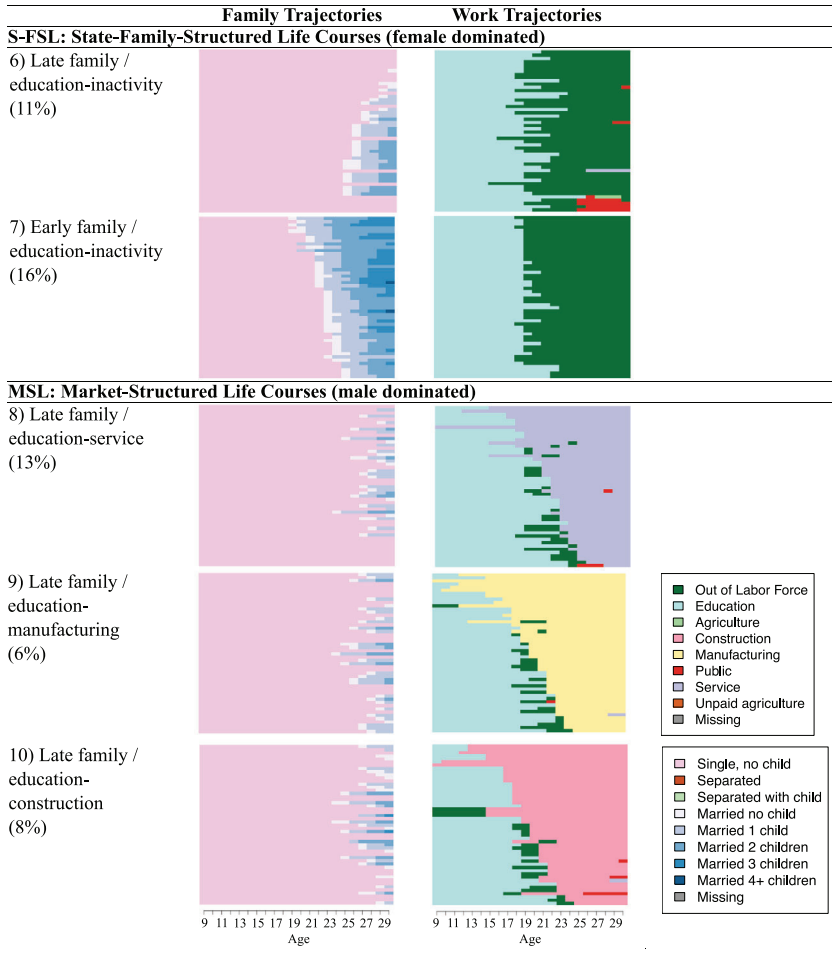
FIGURE 2 RF plots of life courses in decline: State-structured and family-structured life courses



NOTE: The y-axis denotes 0–70 individual sequences that represent 100 percent of each cluster. The numbers before the cluster labels 1–5 refer to the cluster number. Percentages behind the labels denote the size of the group in the population. Sequences sorted from by silhouette from strongest (top) to weakest (bottom) representatives.

presents life courses types that declined across cohorts. Figure 3 shows life courses profiles that increased across cohorts. RF sequence plots display a set of representative individual sequences for each life course cluster. Each colored horizontal line displays one individual life course showing family lives on the left and the corresponding work lives on the right. The x-axis is age, the y-axis denotes 70 representative sequences that represent 100 percent of each cluster. The representative sequences in the RF plots are sorted by

FIGURE 3 RF plots of life courses on the rise: State-family-structured and market-structured



NOTE: The y-axis denotes 0–70 individual sequences that represent 100 percent of each cluster. The numbers before the cluster labels 1–5 refer to the cluster number. Percentages behind the labels denote the size of the group in the population. Sequences sorted from by silhouette from strongest (top) to weakest (bottom) representatives.

silhouette values: individuals who most strongly representative each cluster are at the top and individuals that deviate more are at the bottom.

For example, in Figure 2 the top horizontal line in cluster 1, *the SSL* shows an individual who remained single until age 25 (pink), then transitioned to marriage without children (light blue), followed by the first child one year later at age 26 (medium blue), and had a second child two years after at age 28. The parallel work life of this individual on the right shows a trajectory of education (light green) until age 23 directly followed by public sector work (red). Other individuals in this group represented by the

horizontal lines toward the bottom experience waiting periods of being out of the labor force (dark green) for several years between education and public sector work.

In the first period, statist authoritarian socialism (period I.), life courses of three quarters of the oldest two cohort groups (1956–1970) are structured either by the state, the family, or a combination of both (Figures 2 and 5 and Table 3). The *SSL*, cluster 1 at the top of Figure 2, is the most economically advantaged indicated by the highest household wealth based on assets and dwelling characteristics in the survey year³ (Table 2), and closely resembles the welfare state life course of Dhillon and Yousef (2009): higher education, followed by stable secure public sector employment, relatively late marriage and moderate fertility. The *SSL* resembles the early Fordist life course and young adult life courses from high socioeconomic backgrounds in Western countries (Furstenberg 2010): starting a family with moderate fertility only after completing education and securing high quality employment. The *SSL* accounted for 21 and 14 percent of the cohorts born 1956–1964 and 1965–1970, respectively (Figure 5, Table 3). Although the *SSL* is a predominantly male experience (70 percent), about 3 of 4 working women are in this group. As expected, the *SSL* declined significantly for men and women across cohorts (Figures 4 and 5), and was more common in urban than in rural areas (Table 2).

The most common life course types for men (above 30 percent) and women (above 60 percent) in the first period are *FSLs* reflected in clusters 2, 3, 4, and 5 (Figure 2, Table 3). Two mainly female groups with no education and economic inactivity starting from age ten (Figure 2) divide into cluster 2 (10 percent of population) with late family formation, and cluster 3 (12 percent) that marries around age 17 and has at least three children by age 30. The female *FSL* profiles closely correspond to Dhillon and Yousef's (2009) female traditional life course and a gender regime of domestic patriarchy (Moghadam 2020). The probability of experiencing traditional *FSLs* drastically declined across cohorts (Table 3, Figures 4 and 5). Still, almost one third (29 percent) of women born 1985–1988 experience these life courses of rudimentary education and no economic opportunity, primarily in rural regions (Figure 5, Table 3).

The male versions of the traditional *FSL* comprise two groups (clusters 4 and 5 in Figure 2) of paid or unpaid agricultural workers, after slightly longer education compared to women in *FSLs*. Most of them marry between age 20 and 30 and have one or two children by age 30. The small cluster 4 (4 percent) of marginally educated unpaid agricultural workers includes 25 percent women. Paid agricultural work (cluster 5, 7 percent) was reserved for men (Table 2) and closely resembles Dhillon and Yousef's (2009) ideal type of the patriarchal traditional male life course. In contrast to Dhillon and colleagues' expectations, our estimates show only a moderate decline

TABLE 2 Descriptive information on five work-family life course profiles

State-structured life course (SSL)	Family-structured life courses (FSL)					State- and family-structured life courses (S-FSL)			Market-structured life course (MSL)		
	Cluster 1	Cluster 2 Late family/early inactive	Cluster 3 Early family/early inactive	Cluster 4 Late family/unpaid	Cluster 5 Late family/agriculture	Cluster 6 Late family/inactive	Cluster 7 Early family/inactive	Cluster 8 Manufacturing Construction	Cluster 9 Construction	Cluster 10 Service	
Family trajectories ^a											
Single	17.8	18.4	8.8	15.0	16.2	19.8	11.6	18.6	17.9	17.9	
Separated	0.02	0.02	.04	.04	.01	.01	.02	.02	.01	.02	
Separated C	.0	.01	.02	.003	.01	.00	.03	.00	.00	.00	
Married	1.3	1.2	2.4	1.8	1.8	.9	1.7	1.1	1.3	1.4	
Married 1C	1.6	1.3	2.5	1.9	1.8	.9	2.8	1.2	1.5	1.4	
Married 2C	1.0	.9	3.2	1.5	1.4	.3	3.6	.8	.9	.9	
Married 3C	.2	.18	2.8	1.1	.6	.03	1.8	.2	.3	.3	
Married 4C	.05	.04	2.3	.7	.3	.02	.5	.07	.05	.06	
Missing	.004	.03	.03	.01	.01	.01	.01	.01	.01	.01	
Work trajectories											
Unemployed	1.3	19.4	20.1	2.6	2.2	9.1	11.0	1.9	1.8	1.7	
Education	11.4	.5	.6	1.5	3.3	10.8	9.5	6.2	5.9	7.7	
Agriculture	.2	.3	.3	1.4	14.9	.4	.2	.2	.3	.2	
Construction	.2	.3	.1	.5	.3	.2	.1	.3	12.9	.2	
Manufacturing	.2	.2	.1	.2	.2	.3	.1	12.6	.2	.2	
Public	7.8	.6	.2	.4	.2	.4	.3	.2	.3	.3	
Service	.6	.5	.3	.4	.4	.5	.5	.6	.4	11.5	
Unpaid agr.	.2	.1	.3	14.9	.4	.2	.2	.10	.2	.2	
Missing	.02	.01	.02	.0	.0	.04	.02	.003	.006	.004	
Women	30.05	52.10	90.73	25.26	3.22	67.11	93.43	7.33	0.21	6.66	
Years of schooling	13.70	12.43	11.26	4.70	5.81	4.26	2.16	9.00	8.67	10.46	
Urban	54.50	57.32	45.05	13.53	12.31	36.92	23.39	51.33	38.70	58.53	

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TABLE 2 (continued)

State-structured life course (SSL)	Family-structured life courses (FSL)					State- and family-structured life courses (S-FSL)			Market-structured life course (MSL)	
	Cluster 1	Cluster 2 Late family/early inactive	Cluster 3 Early family/early inactive	Cluster 4 Late family/unpaid	Cluster 5 Late family/agriculture	Cluster 6 Late family/inactive	Cluster 7 Early family/inactive	Cluster 8 Manufacturing Construction	Cluster 9 Construction	Cluster 10 Service
Household Wealth Index ^b	0.56	0.27	0.12	-0.49	-0.63	-0.32	-0.48	0.09	-0.23	0.21
Average silhouette width (ASW)	0.24	0.31	0.19	0.23	0.28	0.38	0.17	0.24	0.27	0.23

^a C indicated "with Children" and the respective number of children.

^b Calculated household wealth index is based on assets and dwelling characteristics in the survey year.
SOURCE: Egypt Labor Market Panel Survey (ELMPS) 2012 and 2018.

TABLE 3 Percentage of state-, family- and market-structured life course by cohort and period

Life course type	I. Statist Authoritarian Socialism		II. Unregulated Crony Capitalism		III. Structural Adjustment and Political Instability		Total
	1956– 1964	1965– 1970	1970– 1974	1975– 1979	1980–1984	1985–1988	
Total %							
State-structured	21	14	14	13	12	9	13
Family-structured	43	47	38	29	27	24	33
State- and family- structured	13	18	21	27	33	41	28
Market-structured	23	22	27	31	28	26	27
N	100	100	100	100	100	100	100
	2,046	2,279	2,697	3,788	4,615	3,732	19,157
Men %							
State-structured	26	17	19	17	16	12	17
Family-structured	32	35	37	19	20	19	24
State- and family- structured	10	9	10	12	14	19	13
Market-structured	32	39	45	52	50	50	46
N	100	100	100	100	100	100	100
	1,425	1,194	1,518	2,110	2,377	1,851	10,475
Women %							
State-structured	11	11	9	9	9	7	9
Family-structured	68	61	53	40	35	29	43
State- and family- structured	18	27	35	47	54	62	46
Market-structured	2	2	3	4	3	2	3
N	100	100	100	100	100	100	100
	621	1,085	1,179	1,678	2,238	1,881	8,682

SOURCE: Egypt Labor Market Panel Survey (ELMPS) 2012 and 2018.

of this traditional male *FSL* in agriculture across cohorts with a substantial 20 percent of men born 1985–1988 still experiencing it (Table 3, Figure 5).

During the rise of unregulated crony capitalism (period II.), as expected (Table 1), the *SSLs* and *FSLs* slowly declined (Table 3, Figure 5). Instead, *S-FSLs* with longer education and economic inactivity increased for women (Figure 3, Table 3). *MFLs* with education followed by waiting periods and informal work in the private sector increased from 32 percent for men born in 1956–1964 to 52 percent for men born in 1975–1979. As visible in the lines in Figure 5, the prevalence of different life course types changed most rapidly between the 1970–1974, and 1975–1980 birth cohorts, before a new distribution of life course types solidified for cohorts born after 1980 (Table 3, Figure 5).

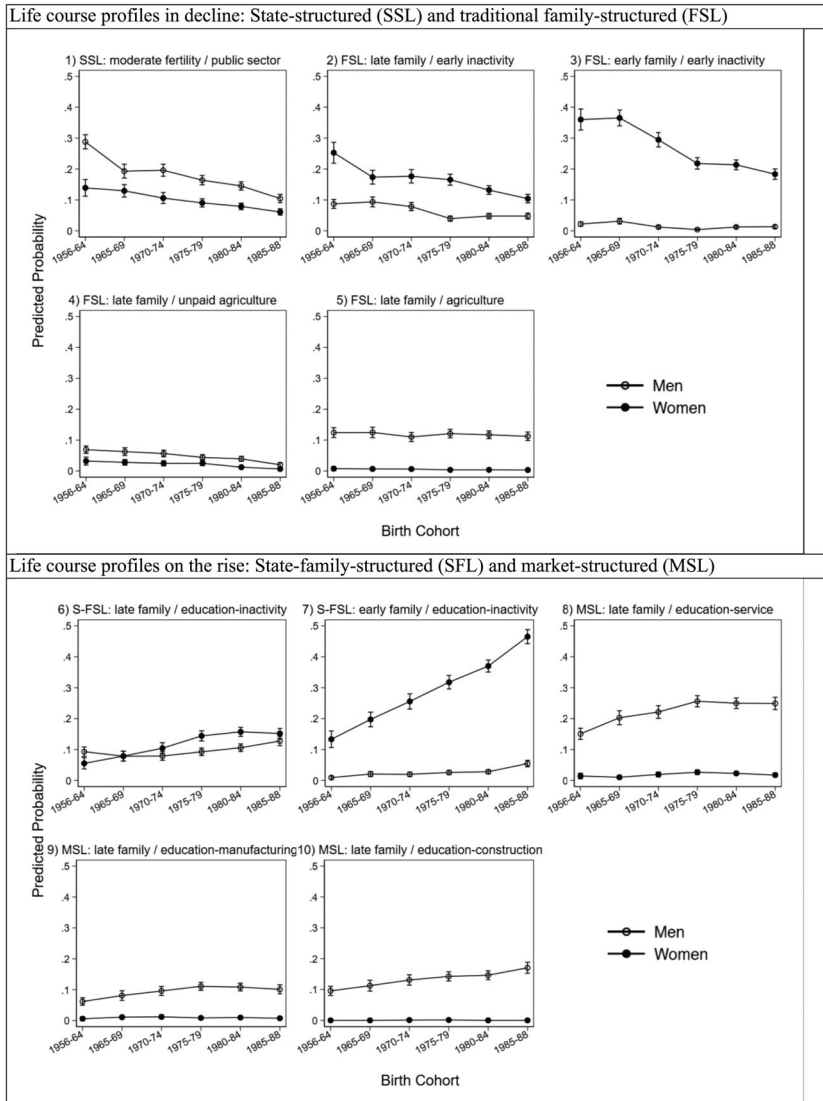
In the third period of structural adjustment and political instability (period III.) the neo-patriarchal division of life courses solidified into

two S-FSL *clusters* predominantly experienced by women and three *MSL profiles* almost exclusively experienced by men (Hypothesis 1c, Figures 3 and 5, Tables 2 and 3). The majority of women (54 percent and 62 percent of women born 1980–1984 and 1985–1988), experience a S-FSL (clusters 6 and 7 in Figure 3, see Table 3 and Figure 5). They participate in state-funded higher education until around age 20, but then disappear into enduring economic inactivity. Most of them marry shortly after completing education and have three children by the age of 30 (cluster 7, Figure 4). A smaller group combines education and economic inactivity with delayed family formation and remains mostly unmarried and childless by age 30, presumably in the domestic sphere of their family of origin (cluster 6 in Figure 3, Figure 4). This could be related to a shortage of economically marriageable men in their cohort range.

The majority of men born after 1975 experience a *MSL* of higher education, usually followed by waiting periods, and then work in the private sectors of service (cluster 8, 13 percent), manufacturing (cluster 9, 6 percent) or construction (cluster 10, 8 percent). All *MSL profiles* share relatively late family formation with significant proportions still unmarried and childless at age 30. The relative size of the three *MSLs* shifts according to known changes in the economy: The share of men with life courses in service (cluster 8) and manufacturing (cluster 9) stagnated at around 25 and 10 percent net of controls for cohorts born after 1975 (Table 4, Figure 4). Only the share of men in construction (cluster 10) continued to rise for the youngest cohorts to around 20 percent, in line with Sisi's most recent infrastructure program (Figure 4). The stagnation of manufacturing jobs signifies the failure of structural adjustment programs to sustainably promote nonoil-based exports. Moreover, manufacturing and industrialization of tradable goods tend to provide more employment opportunities for women (Joekes and Moayed 1987), whereas construction is deemed particularly unsuitable. Notably, the *family-structured* agricultural life course still accounts for 19 percent of men born 1985–1988. The S-FSL of enduring inactivity also increases from 10 percent for men born 1956–1964 to 19 percent for men born 1985–1988 (Table 3, Figures 4 and Figures 5).

In sum, the findings support Hypotheses 1a–1c (Table 1) on cohort change in life courses, suggest that gender inequality in life courses will increase across cohorts (Hypothesis 2), and that GDP growth will be associated with economically precarious *MSLs* and delayed family formation for men, and economic inactivity despite education for women (Hypothesis 3). Below, we offer a more direct test of these assumptions.

FIGURE 4 Predicted probability to be in work–family life course profiles by gender and cohort



Did gender inequality in life courses increase across cohorts?

Figure 6 and Table 5 assess the degree of difference (BIC) and statistical significance (LRT) of gender differences between life courses (Liao and Fasang 2021). For each cohort group women’s life courses are compared to men’s, separately for work and family life courses. For all cohorts BIC values exceed 10, indicating very strong differences in men and women’s life courses (Kass and Raftery 1995; Liao and Fasang 2021). In line with Hypothesis

TABLE 4 Multinomial logistic regression model on likelihood to sort into each life course profile (marginal effects are shown and standard errors in parentheses)

Base outcome: SSL: moderate fertility (Cluster 1) Women	Late family/ early		Early family/ inactive		Late family/ inactive		Early family/ inactive		Manufacturing (Cluster 8)		Construction (Cluster 9)		Service (Cluster 10)	
	(Cluster 1) 0.028*** (0.005)	(Cluster 2) 0.288*** (0.005)	(Cluster 3) 0.038*** (0.008)	(Cluster 4) -0.026*** (0.002)	(Cluster 5) -0.113*** (0.003)	(Cluster 6) 0.094*** (0.005)	(Cluster 7) 0.242*** (0.004)	(Cluster 8) -0.088*** (0.003)	(Cluster 9) -0.137*** (0.003)	(Cluster 10) -0.212*** (0.004)				
Cohort (ref: 1956–1964)														
1965–1969	-0.006 (0.008)	0.038*** (0.008)	0.038*** (0.008)	-0.004 (0.006)	0.001 (0.007)	-0.026* (0.011)	0.008 (0.010)	0.013* (0.006)	0.009 (0.006)	0.027** (0.008)	0.009 (0.006)	0.027** (0.008)	0.027** (0.008)	0.027** (0.008)
1970–1974	0.006 (0.008)	0.063*** (0.009)	0.063*** (0.009)	-0.009 (0.006)	-0.008 (0.006)	-0.033** (0.010)	-0.034*** (0.010)	0.021*** (0.006)	0.020** (0.006)	0.041*** (0.008)	0.020** (0.006)	0.041*** (0.008)	0.041*** (0.008)	0.041*** (0.008)
1975–1979	0.032*** (0.008)	0.095*** (0.008)	0.095*** (0.008)	-0.016** (0.005)	-0.003 (0.006)	-0.060*** (0.010)	-0.073*** (0.009)	0.028*** (0.005)	0.026*** (0.006)	0.064*** (0.008)	0.028*** (0.006)	0.064*** (0.008)	0.064*** (0.008)	0.064*** (0.008)
1980–1984	0.046*** (0.008)	0.120*** (0.008)	0.120*** (0.008)	-0.024*** (0.005)	-0.005 (0.006)	-0.070*** (0.010)	-0.071*** (0.009)	0.027*** (0.005)	0.028*** (0.006)	0.059*** (0.008)	0.028*** (0.006)	0.059*** (0.008)	0.059*** (0.008)	0.059*** (0.008)
1985–1988	0.055*** (0.009)	0.177*** (0.009)	0.177*** (0.009)	-0.037*** (0.005)	-0.008 (0.006)	-0.083*** (0.009)	-0.084*** (0.009)	0.022*** (0.006)	0.041*** (0.007)	0.056*** (0.008)	0.041*** (0.007)	0.056*** (0.008)	0.056*** (0.008)	0.056*** (0.008)
Parent's education (ref: illiterate)														
Reads and writes	0.032*** (0.007)	0.044*** (0.007)	0.044*** (0.007)	0.001 (0.004)	-0.025*** (0.005)	-0.039*** (0.006)	-0.061*** (0.006)	-0.009* (0.005)	-0.010+ (0.005)	0.002 (0.007)	-0.010+ (0.005)	0.002 (0.007)	0.002 (0.007)	0.002 (0.007)
Less than intermediate	0.054*** (0.008)	0.036*** (0.008)	0.036*** (0.008)	-0.005 (0.006)	-0.033*** (0.006)	-0.047*** (0.007)	-0.090*** (0.007)	-0.011* (0.005)	-0.009 (0.006)	0.008 (0.008)	-0.009 (0.006)	0.008 (0.008)	0.008 (0.008)	0.008 (0.008)
Intermediate	0.058*** (0.010)	0.046*** (0.010)	0.046*** (0.010)	-0.027*** (0.005)	-0.033*** (0.009)	-0.045*** (0.009)	-0.118*** (0.007)	-0.024*** (0.006)	-0.030*** (0.007)	-0.003 (0.009)	-0.030*** (0.007)	-0.003 (0.009)	-0.003 (0.009)	-0.003 (0.009)
Above intermediate	0.084*** (0.022)	0.044* (0.020)	0.044* (0.020)	-0.036*** (0.011)	-0.024 (0.012)	-0.065*** (0.016)	-0.129*** (0.012)	-0.018 (0.011)	-0.056*** (0.011)	-0.011 (0.017)	-0.056*** (0.011)	-0.011 (0.017)	-0.011 (0.017)	-0.011 (0.017)
University	0.093*** (0.016)	0.001 (0.013)	0.001 (0.013)	-0.031*** (0.006)	-0.038** (0.014)	-0.029* (0.014)	-0.146*** (0.006)	-0.023** (0.008)	-0.044*** (0.009)	-0.014 (0.012)	-0.044*** (0.009)	-0.014 (0.012)	-0.014 (0.012)	-0.014 (0.012)
Number of siblings	-0.003** (0.001)	0.001 (0.001)	0.001 (0.001)	0.002*** (0.000)	0.001 (0.001)	-0.002** (0.001)	0.002** (0.001)	0.000 (0.001)	0.002** (0.001)	0.001 (0.001)	0.002** (0.001)	0.001 (0.001)	0.001 (0.001)	0.001 (0.001)

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TABLE 4 (Continued)

Base outcome: SSL: (Cluster 1) Region (ref: Cairo)	Late family/ early		Early family/ inactive		Late family/ unpaid		Late family/ agriculture		Late family/ inactive		Early family/ inactive		Manufacturing		Construction		Service		
	(Cluster 2)	(Cluster 3)	(Cluster 4)	(Cluster 5)	(Cluster 6)	(Cluster 7)	(Cluster 8)	(Cluster 9)	(Cluster 10)	(Cluster 11)	(Cluster 12)	(Cluster 13)	(Cluster 14)	(Cluster 15)	(Cluster 16)	(Cluster 17)	(Cluster 18)	(Cluster 19)	
Alexandria	-0.004 (0.012)	-0.017 (0.011)	-0.007 ⁺ (0.004)	0.013 [*] (0.006)	0.057 ^{***} (0.012)	-0.012 (0.010)	-0.028 ^{**} (0.009)	-0.002 (0.010)	-0.039 ^{**} (0.012)	0.017 (0.012)	0.017 ⁺ (0.010)	0.026 [*] (0.009)	0.026 [*] (0.009)	0.017 ⁺ (0.010)	0.026 [*] (0.009)	0.026 [*] (0.009)	0.026 [*] (0.009)	0.026 [*] (0.009)	0.026 [*] (0.009)
Urban lower	-0.031 ^{**} (0.010)	0.024 [*] (0.011)	0.007 (0.005)	0.011 [*] (0.005)	-0.001 (0.010)	-0.002 (0.009)	-0.010 (0.009)	-0.001 (0.009)	-0.028 ^{**} (0.012)	0.009 (0.009)	0.009 (0.009)	0.009 (0.009)	0.009 (0.009)	0.009 (0.009)	0.009 (0.009)	0.009 (0.009)	0.009 (0.009)	0.009 (0.009)	0.009 (0.009)
Urban upper	-0.009 (0.010)	0.006 (0.010)	0.017 ^{***} (0.005)	0.040 ^{***} (0.005)	-0.008 (0.009)	0.010 (0.009)	-0.050 ^{***} (0.008)	-0.002 (0.008)	-0.066 ^{***} (0.011)	0.009 (0.009)	0.009 (0.009)	0.009 (0.009)	0.009 (0.009)	0.009 (0.009)	0.009 (0.009)	0.009 (0.009)	0.009 (0.009)	0.009 (0.009)	0.009 (0.009)
Rural lower	-0.053 ^{***} (0.009)	0.036 ^{***} (0.009)	0.031 ^{***} (0.004)	0.063 ^{***} (0.004)	-0.006 (0.009)	0.024 ^{**} (0.008)	-0.015 [*] (0.008)	-0.024 ^{**} (0.008)	-0.096 ^{***} (0.010)	0.009 (0.009)	0.009 (0.009)	0.009 (0.009)	0.009 (0.009)	0.009 (0.009)	0.009 (0.009)	0.009 (0.009)	0.009 (0.009)	0.009 (0.009)	0.009 (0.009)
Rural upper	-0.058 ^{**} (0.010)	-0.034 ^{***} (0.009)	0.031 ^{***} (0.004)	0.084 ^{***} (0.005)	0.026 ^{**} (0.009)	0.098 ^{**} (0.008)	-0.063 ^{***} (0.007)	0.021 [*] (0.008)	-0.114 ^{***} (0.010)	0.009 (0.009)	0.009 (0.009)	0.009 (0.009)	0.009 (0.009)	0.009 (0.009)	0.009 (0.009)	0.009 (0.009)	0.009 (0.009)	0.009 (0.009)	0.009 (0.009)
Father's occupation (ref: elementary occupation)																			
High white-collar	0.026 [*] (0.010)	0.017 (0.012)	0.002 (0.004)	-0.017 [*] (0.007)	0.009 (0.010)	-0.032 ^{**} (0.010)	-0.007 (0.008)	-0.024 ^{**} (0.009)	0.046 ^{***} (0.011)	0.009 (0.010)	0.009 (0.010)	0.009 (0.010)	0.009 (0.010)	0.009 (0.010)	0.009 (0.010)	0.009 (0.010)	0.009 (0.010)	0.009 (0.010)	0.009 (0.010)
Low white-collar	0.017 ⁺ (0.010)	-0.014 (0.011)	0.005 (0.004)	0.003 (0.007)	0.046 ^{***} (0.010)	0.008 (0.010)	-0.015 [*] (0.008)	-0.021 [*] (0.008)	0.014 (0.011)	0.008 (0.010)	0.008 (0.010)	0.008 (0.010)	0.008 (0.010)	0.008 (0.010)	0.008 (0.010)	0.008 (0.010)	0.008 (0.010)	0.008 (0.010)	0.008 (0.010)
Agricultural worker	0.001 (0.009)	-0.029 ^{**} (0.010)	0.041 ^{***} (0.004)	0.051 ^{***} (0.006)	0.041 ^{***} (0.008)	0.007 (0.008)	-0.030 ^{***} (0.007)	-0.010 (0.008)	-0.036 ^{***} (0.009)	0.001 (0.009)	0.001 (0.009)	0.001 (0.009)	0.001 (0.009)	0.001 (0.009)	0.001 (0.009)	0.001 (0.009)	0.001 (0.009)	0.001 (0.009)	0.001 (0.009)
Unskilled manual worker	0.020 [*] (0.009)	-0.005 (0.011)	-0.003 (0.004)	-0.014 [*] (0.006)	0.025 ^{**} (0.009)	-0.008 (0.008)	0.012 (0.007)	0.012 (0.008)	-0.002 (0.009)	0.009 (0.009)	0.009 (0.009)	0.009 (0.009)	0.009 (0.009)	0.009 (0.009)	0.009 (0.009)	0.009 (0.009)	0.009 (0.009)	0.009 (0.009)	0.009 (0.009)
Armed forces	-0.000 (0.021)	-0.003 (0.026)	-0.013 ^{***} (0.003)	-0.017 (0.019)	-0.011 (0.025)	0.030 (0.033)	0.011 (0.020)	0.014 (0.025)	0.031 (0.026)	0.009 (0.009)	0.009 (0.009)	0.009 (0.009)	0.009 (0.009)	0.009 (0.009)	0.009 (0.009)	0.009 (0.009)	0.009 (0.009)	0.009 (0.009)	0.009 (0.009)
Working mother	-0.033 ^{***} (0.007)	-0.025 ^{**} (0.009)	0.011 (0.008)	0.013 (0.009)	-0.013 (0.009)	0.022 [*] (0.011)	0.005 (0.007)	-0.007 (0.008)	-0.007 (0.009)	0.009 (0.009)	0.009 (0.009)	0.009 (0.009)	0.009 (0.009)	0.009 (0.009)	0.009 (0.009)	0.009 (0.009)	0.009 (0.009)	0.009 (0.009)	0.009 (0.009)
N	19,157	19,157	19,157	19,157	19,157	19,157	19,157	19,157	19,157	19,157	19,157	19,157	19,157	19,157	19,157	19,157	19,157	19,157	19,157

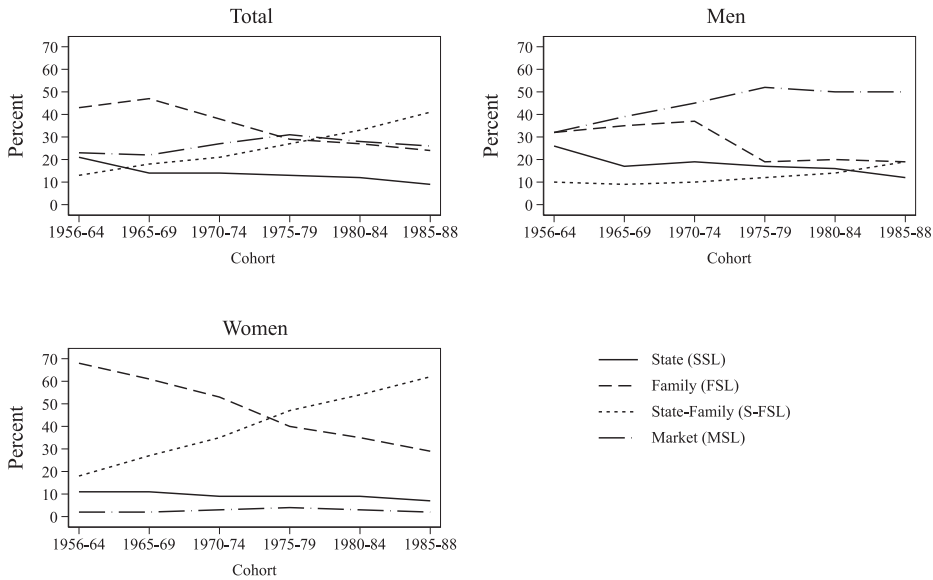
*p < 0.05,

**p < 0.01,

***p < 0.001.

SOURCE: Egypt Labor Market Panel Survey (ELMPS) 2012 and 2018.

FIGURE 5 Share of state-, family- and market-structured life course by cohort and period

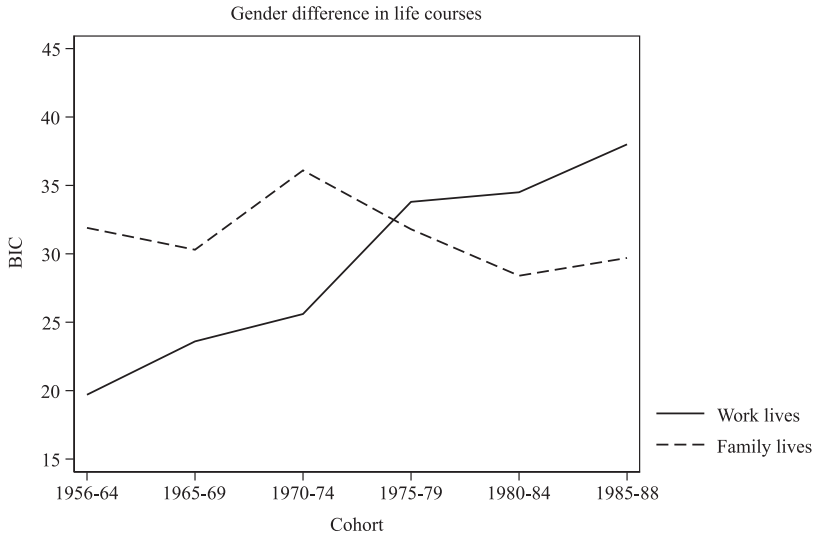


SOURCE: Egypt Labor Market Panel Survey (ELMPS) 2012 and 2018.

NOTE: State-structured life course includes cluster 1, Family-structured life courses includes clusters 2, 3, 4, and %, State-family-structured life courses comprise 6&7, and market structured life courses cluster 8, 9, and 10.

3, the BIC between men and women’s work lives increases by 93 percent from 19.7 for cohorts born 1956–1964 to 38.0 for the youngest cohorts born 1985–1988. Change is small among the first cohort groups and jumps from 25.6 to 33.8 in the transition period (II) of unregulated crony capitalism between the cohorts born 1970–1974 and 1975–1980, substantiating the acceleration of social change in the succession of these specific birth cohorts. Gender differences in work lives therefore spiked with the rise of the male *MSLs* from which women were factually excluded, while women increasingly remained inactive even after higher education. The oldest cohorts experience less gender differences in work lives due to the higher prevalence of more egalitarian *SSLs*, and more gender integrated *FSLs* of early unpaid agricultural work.

In contrast to work lives, the gender gap in family lives is more stable across cohorts, fluctuating between a BIC of 28.4 and 36.1 (Figure 6, Table 5). This is primarily due to women’s on average earlier onset of family formation compared to men. Contrary to the gender divergence in work lives, men and women’s family life courses even slightly converge for the three youngest cohort groups from a BIC of 31.9 for the 1956–1964 birth cohorts to 29.7 for the 1985–1988 cohorts reflecting delays in family formation. Men’s limited ability to realize the economic pre-conditions deemed

FIGURE 6 BIC and LRT for sequence comparison on differences between men and women's life courses by cohort

SOURCE: Egypt Labor Market Panel Survey (ELMPS) 2012 and 2018.

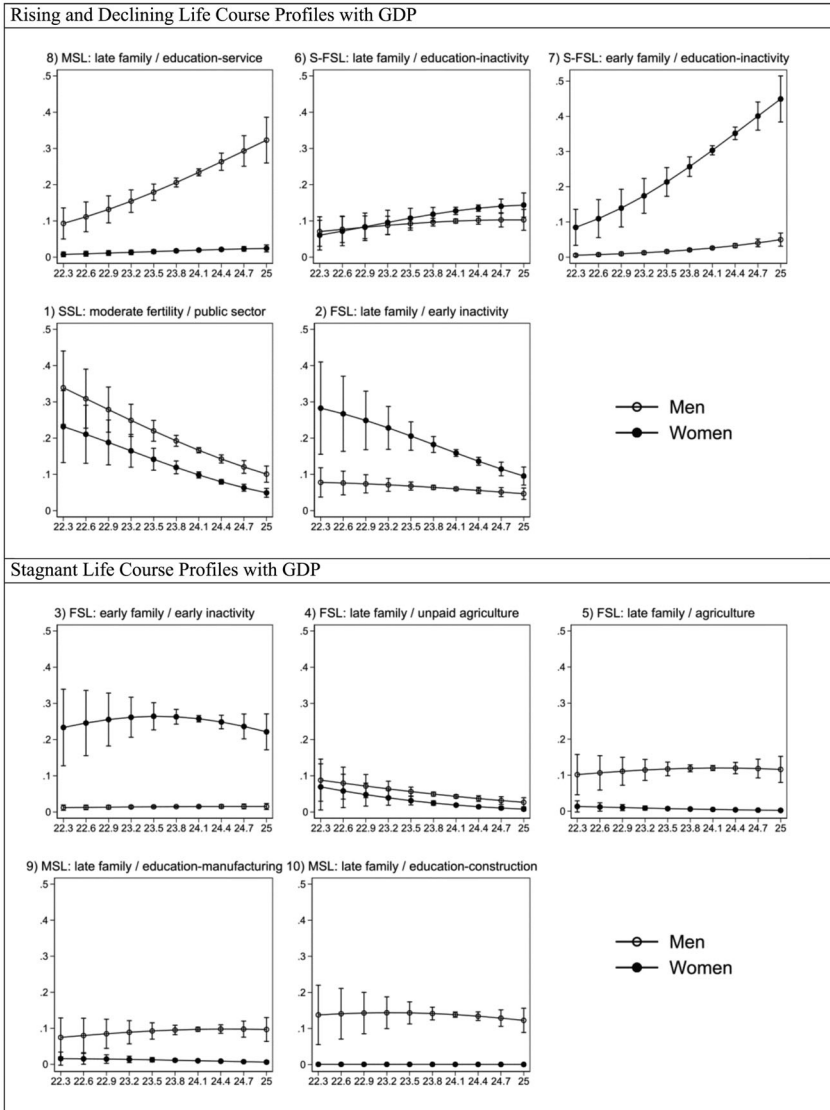
TABLE 5 BIC and LRT for sequence comparison on differences between men and women's life courses by cohort

Cohort	Work			Family		
	BIC	p	LRT	BIC	p	LRT
1956–1964	19.7	0.000	25.0	31.9	0.000	37.3
1965–1970	23.6	0.000	28.9	30.3	0.000	35.6
1970–1974	25.6	0.000	30.0	36.1	0.000	41.4
1975–1979	33.8	0.000	39.1	31.8	0.000	37.0
1980–1984	34.5	0.000	39.8	28.4	0.000	33.7
1985–1988	38.0	0.000	43.3	29.7	0.000	35.0
Total	31.3	0.000	36.6	30.6	0.000	36.0

SOURCE: Egypt Labor Market Panel Survey (ELMPS) 2012 and 2018.

necessary for marriage also translates into declining marriage prospects for women. Overall, the BIC and LRT show increasing gender inequality in work life courses in line with the establishment of a neo-patriarchal public gender regime (Moghadam 2020). Figure A7 in the Appendix (in the Supporting Information) plots the relationship between GDP and estimated BIC scores and further substantiates our argument: work life courses of men and women diverge with development, while family life courses become more similar.

FIGURE 7 Predicted probability to be in life course profiles by GDP (with controls)



How is GDP associated with men and women’s typical life course experiences?

Figure 7 shows predicted probabilities of sorting into different life course types for men and women by GDP, controlling for background characteristics and cohort. Therefore, the associations are not driven by cohort change, but show the association between GDP and the life course typology. GDP fluctuated nonlinearly in our observation period (El-Haddad 2020). In line with Hypothesis 3, the *SSL* declines substantially with rising GDP and even

more so for women than for men (Figure 7). Rising economic development clearly did not expand but retrench secure public sector jobs. The traditional *FSL* of early family formation and inactivity declined with rising GDP, particularly for women. Instead, for women the educated *S-FSL* of early family formation coupled with education followed by inactivity drastically increased from 10 percent to almost 50 percent across the observed GDP range (Figure 7).

For men, only the *MSL* dominated by informal service jobs (cluster 8) consistently increased with GDP growth, whereas there is no association between GDP and the *MSLs* in manufacturing (cluster 9) and construction (cluster 10). Apparently, expanding job opportunities for young adults in manufacturing and construction across cohorts (Figure 4) are related to government economic policies and not to GDP growth (Figure 7). This finding aligns with state-driven industrialization, characterized by investment in manufacturing during period II, and recurring government initiatives aimed at boosting labor demand in construction, such as those observed during period III under Sisi (Table 1).

Conclusion

Despite educational expansion and economic growth job prospects for young adults have remained bleak in Egypt and gender inequalities persist. The life course paradigm suggests mapping social change through the succession of birth cohorts with different typical life courses as they unfold over time. The life course approach to social change thereby offers a dynamic microfoundation of the processes that drive aggregate trends in employment and family indicators. To date life course studies have predominantly covered affluent democracies of the Global North. We adopt a life course approach to map cohort change in work and family life courses in six decades of Egypt's post-independence development (research question 1), assess how gender inequality in work and family life courses changed across cohorts (research question 2), and link typical life course profiles to aggregate GDP (research question 3). Our institutionalist life course framework specifies macrostructural conditions that jointly shape individual life courses and interact with meso level family networks and local religious communities to shape life course change across cohorts.

Building on previous life course regimes in Europe, North America, and the MENA region, we distinguished three types of life courses based on whether the state, the family, or the market are their main structuring force. Our ideal-typical *SSL* and *FSL* types closely correspond to Dhillon and Yousef's (2009) welfare state life course, and traditional life course types. In contrast to Dhillon and Yousef's (2009) optimistic vision of a soon to solidify economically prosperous post-welfare state life course our findings are disillusioning. For almost a decade of our youngest birth cohorts

(1980-88), women have mainly reverted to a S-FSL in a mal-functioning private market that provides no opportunities for them despite higher education. Men primarily work in informal private sector jobs after waiting periods with their family formation often delayed until after age 30. The vanishing *SSL* established under Nasser's authoritarian socialism remains the most gender egalitarian and economically prosperous life course experienced by a sizeable number of people within six decades of social change in Egypt. Our analysis likely misses the few richest families, who reap most of the oil-revenue-based wealth, a very small group known to disproportionately evade participation in surveys (Korinek, Mistiaen, and Ravallion 2006).

Concerning research question 1, our life course approach to social change documents accelerated cohort change in life courses in the transition period to unregulated crony capitalism between cohorts born 1965–1970 and 1975–1979 with a new pattern stabilizing for cohorts born after 1980. The observed cohort change in life courses in Egypt can be historically and geographically contextualized. The *SSL* under Nasser resembles highly standardized life courses in the communist regimes in Eastern Europe before 1990 (Mayer 2004). The male *MSLs* combine elements of Mayer's (2005) early industrial life courses and the Post-Fordist life course. In the early industrial life course, individuals only rise above poverty for a short time when they already work, but have no family to care for yet, akin to Rowntree's (1902) "life cycle of poverty". In the Post-Fordist life course, individual's fate is strongly tied to their employers' economic success, labor market entry is difficult and protracted, and work lives are unpredictable and unstable. Both the early industrial and the Post-Fordist life course delay family formation until a minimum standard of economic security is achieved, and often involve extended waiting periods between education and employment. Extended waiting periods between education and employment, and a delay of family formation are also visible in the male *MSLs* among the youngest cohorts in Egypt. Historical life course studies in Europe and North America tend to associate socioeconomic dis-advantage with life course complexity and instability. In contrast, our findings highlight complete stability, that is, "waithood" in enduring economic inactivity without any notable transitions as another expression of socioeconomic disadvantage experienced by a sizeable fraction of young adults in Egypt, particularly women.

One implication of this cohort change in life courses is that gender inequality in work lives increased (Hypothesis 2). The transition from domestic patriarchy to neo-patriarchal public patriarchy (Moghadam 2020; Walby 2009) is clearly visible in rising gender differences in work lives with accelerated divergence in period II., the transition to unregulated crony capitalism. At the same time our findings highlight the continued persistence of domestic patriarchal life courses of rudimentary education, economic inactivity and early high fertility even for the youngest cohorts: one-third of

women born 1985–1988 continue to experience domestic patriarchal *FSLs*. In addition to the public patriarchy of the state, our findings emphasize the patriarchy of private markets that *de facto* exclude women from private sector employment. In contrast, gender inequalities in family life courses only moderately fluctuate and even slightly converge for the youngest cohorts as both genders delay family formation due to rising economic constraints (Salem 2015; Amin and Al-Bassusi 2004).

Findings further corroborate that the specific type of economic growth with government withdrawal in favor of unregulated crony capitalism in Egypt has not created economic opportunities for young adults, and for women even less so than for men (Singerman 2013). For women, rising GDP is associated with a higher likelihood of enduring exclusion from paid work, irrespective of whether they have children or not, and despite higher education. Even for men, rising GDP only raises the probability of *MSLs* in the informal service sector, but not in manufacturing or construction, which apparently are driven by state-led industrialization and government infrastructure programs. As indicated by the BIC between men and women's work lives, gender inequality in work life courses increased with rising GDP in Egypt. Our study is in line with previous research showing that standard indicators of development, such as GDP, do not necessarily go along with gender equality and underline the crucial role of the public sector for granting women employment opportunities (Anderson and Kohler 2015; Buyukkececi and Engelhardt 2021; Assaad and Barsoum 2019).

Interactions between the formative forces of life courses on different levels of analysis proved important in our analysis, as recently highlighted in the study of global family change (Furstenberg 2019; Pesando 2019). Meso-level family networks and local communities are relatively more important for structuring life courses when state intervention is weak and private markets are ineffective in providing wide-spread formal employment. Specifically, meso-level family and religious networks were more powerful in regulating work and family life courses for younger cohorts, and for women more so than men. Women face an even greater void of macrostructural opportunities in the public sector or in private markets than men. Future comparative life course research should seek to systematically disentangle how state policies, economic development and meso-level networks interact to structure life courses and associated economic rewards in low-, middle- and high-income countries.

Several limitations of our analysis point to avenues for future research. Older cohorts may contain more socioeconomically advantaged individuals who survived until the survey. Yet, the oldest cohort included was 62 at the time of the survey and Egypt's total life expectancy was 71.8 in 2018 (UNDP 2019), suggesting only moderate selectivity, if any. Extended families and blood relations are important family-level determinants of life courses in the MENA region, but could not be considered due to data

limitations. This will be possible for younger cohorts in the ELMPS data, and will allow researchers to assess the implications of living arrangements in wider kinship networks for gender inequality in life courses (Moghadam 2004). Finally, it would be interesting to test to what extent our results for Egypt generalize to the MENA region and other low- and middle-income countries. For example, the Maghreb countries have been classified as a more egalitarian corporatist-conservative gender regime (Moghadam 2020) that could be reflected in less gender-segregated life courses and different patterns of cohort change.

Cohort change in life courses is important, because young adults form their life goals and aspirations relative to what they observe in their parents' generation (Easterlin 1976; Ryder 1965). In Egypt, adverse generational change in young adult's work lives spills over into delaying family lives, despite educational expansion and a legacy of active life course policies guaranteeing economic returns to education (Binzel and Carvalho 2016). This likely contributed to the 2011 uprisings coupled with a favorable opportunity structure for protest (Singerman 2013; Wickham 2002). Contemporary Egypt with an authoritarian resurgence and strong military control might provide a less favorable opportunity structure for protest but the frustrations of young adults with limited possibilities to attain classic markers of adulthood persist and remain a fertile ground for political unrest.

Acknowledgments

We would like to acknowledge the contributions of our co-author, Vered Kraus, who played an integral role in the formulation of the research question and design, as well as working on prior versions of the paper. Despite her heartbreaking death, her input and dedication to this project will always be remembered. Zafer and Anette have taken care to respectfully and critically consider Vered's contributions, and take full responsibility for any errors in the final version of the study.

This work was supported by the European Commission via Horizon 2020 (project NORFACE Joint Research Programme on Dynamics of Inequality Across the Life-Course) under Grant 724363, the Deutsche Forschungsgemeinschaft (DFG, German Research Foundation), Germany's Excellence Strategy (project Cluster of Excellence "Contestations of the Liberal Script") under Grant EXC 2055, Project-ID: 390715649.

Finally, we would like to thank Rob Gruijters, Yuval Yonay, the editors of *Population and Development Review*, and the two anonymous reviewers for their valuable comments and feedback, which greatly improved the quality of this work.

Notes

1 Extending to later ages would have restricted us to older cohorts because the fertility questions were only asked of women aged 18–49. We could identify work–family life courses for an additional 1,189 respondents born between 1956 and 1963 who were included in the data.

2 We assessed the reliability of these models using separate logistic regression models for each cluster. The findings were robust.

3 Respondents had different ages when reporting wealth scores in a given survey year. The wealth differences should be interpreted as relatively rough approximations.

Data Availability Statement

This study uses two waves (2012 and 2018) of the Egyptian Labor Market Panel Survey (ELMPS, OAMDI 2019). These datasets are publicly available for download from the Economic Research Forum at <http://www.erfdataportal.com>.

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