Gender Inequalities at the Work-Family Interface: Exploring the Role of Women's Resources and Cultural Norms in Modern-day Egypt

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Declaration

This thesis has not been submitted in support of an application for another degree at this or any other university. It is the result of my own work and includes nothing that is the outcome of work done in collaboration except where specifically indicated. Many of the ideas in this thesis were the product of discussion with my supervisors Dr. Yang Hu and Professor Karen Broadhurst.

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Abstract

Progress in narrowing education and employment gender gaps is being observed in many countries across the world and has come to be known as the "gender revolution". Today, women are entering higher education in large numbers and have begun to outperform men. They are spending more time in the labour market and, in some countries, the employment rates of both genders have converged. These changes are impacting women's family and work lives globally, and Egypt is no exception. Similar to other patriarchal Arab countries, however, is that gender relations in Egypt have remained unequal in the family, and expectations of marriage and motherhood are commonplace. These continuing gender inequalities remain understudied.

To fill this gap, this thesis explores the ways in which resources and cultural constraints in modern-day Egypt shape gender inequalities at the work-family interface during key life stages and events: adolescence, marriage, and reproduction. Specifically, I examine how gender inequalities persist across generations in the Egyptian family, and what these mean for women's socioeconomic well-being in marriage. To do so, attention is paid to three key dimensions of gender inequality: women's employment stability, their risk of intimate partner violence (IPV), and their household decision-making power. Using both cross-sectional and longitudinal data from Egypt permitted a quantitative analysis of women's resources, cultural norms, and their interaction, on women's empowerment in the Egyptian family.

The thesis is ordered to follow a woman's normative life trajectory in Egypt. It begins by providing the first investigation of the intergenerational link between maternal employment during women's own adolescence and their subsequent adult employment stability. While identifying the positive impact of maternal employment, this study finds that this link is mediated by women's education, and moderated by the employment sector. Next, building on existing research, this thesis explores how, if at all, the Arab Spring has altered women's risk of IPV in marriage. I consider whether women's employment offers more effective protection against IPV, using data before and after the revolution. Finally, I examine whether women's household decision-making power is affected by women's command of resources. Here, I move beyond considering the resources of education and employment to also consider women's patrilineal fertility—

that is, having at least one son—and how it operates alongside women's education and employment.

The thesis fills an important gap by assessing how cultural, economic, and non-economic resources come together to configure power relations in the family and gender inequalities in the labour market in a non-Western context. It uncovers the mechanisms that maintain and reinforce gender inequality within the Egyptian family. By drawing attention to contextual changes and historic events such as the Arab Spring, it also highlights how these inequalities have remained stubborn, despite sweeping socio-political changes. Together, the findings from this study reveal a mosaic of social changes characterised by both progress *and* stasis. Thus, the thesis documents an incomplete gender revolution in Egypt—maternal employment enhances women's employment stability, and, in turn, women's employment reduces their risk of IPV; yet their marital power remains contingent on the birth of a son, regardless of their education and employment.

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List of Key Abbreviations and Acronyms

CAPMAS	Central Agency for Public Mobilisation and Statistics
DHS	Demographic and Health Survey
ELMPS	Egypt Labour Market Panel Survey
ERF	Economic Research Forum
IPV	Intimate Partner Violence
IV	Instrumental Variable
KHB	Karlson, Holm, and Breen decomposition method
2SLS	Two-stage Least-squares regression

1 Introduction

Over the past several decades, significant changes in family and work patterns in North America and Western Europe have been consistently documented in the literature. In this first introductory chapter, a brief review of these changes enables contemporary patterns of family life and gender relations in Egypt to be considered in their broader global context. Turning first to educational attainment, gender gaps in educational attainment have disappeared or even reversed in favour of women in the many Western contexts (Van Bavel, Schwartz, & Esteve, 2018). In turn, advances in educational attainment and shifting cultural norms have served to re-shape opportunities for women in the labour market and at home. Women are no longer confined to domestic roles within the family, and instead have become increasingly involved in the public spheres of work and politics. Their labour force participation has grown immensely since the 1960s and with it, so has the dual-breadwinner family (Blossfeld & Kiernan, 2019; Frejka, Goldscheider, & Lappegård, 2018). At the same time, the growth in women's labour force participation in some countries has been accompanied by a less pronounced increase in men's housework and childcare (Frejka et al., 2018). Together, these changes have been commonly referred to as the 'gender revolution' (Goldscheider, Bernhardt, & Lappegård, 2015).

This revolution has led to the restructuring of family life. Non-marital sexual relations are no longer stigmatised, and the pressure to marry has lessened (Bumpass, 2000). Consequently, rates of marriage have declined, with widespread acceptance of cohabitation as an alternative to marriage (Bellani, Esping-Andersen, & Nedoluzhko, 2017; Lahad & Kravel-Tovi, 2020). For those who do marry, marriage offers less relationship stability than has been the case historically, as evidenced by the high and increasing rates of union dissolution in parts of Western Europe (Perelli-Harris, Berrington, Gassen, Galezewska, & Holland, 2017). Women's labour force participation, and its effects on their ability to reconcile work-family conflict, has had a visible impact on their fertility. Couples are now delaying childbearing, having a smaller

number of children, or choosing to forgo parenthood altogether (Lesthaeghe, 2010; ONS, 2020).

The development of welfare regimes and various support mechanisms have facilitated these family and work life changes. The introduction of family-friendly policies in many of the social democratic welfare states has enabled women to pursue long-term careers and to manage domestic responsibilities alongside them (Esping-Andersen, 1990; Goldscheider et al., 2015). While the provision and coverage of services such as paid maternity leave, childcare assistance, and flexitime vary between countries, most are legally obliged to permit some degree of work-family balance (UNICEF, 2019). Moreover, traditional beliefs regarding the roles of men and women have decreased, and support for a more egalitarian division of labour in the home is much greater today than it has been in the past (Lesthaeghe, 2010).

Turning to gender and family in Egypt, some similar trends have occurred in Egyptian society, but with very different consequences for women's work and family arrangements. With regard to women's educational achievements, the country has begun to resemble some of its North American and Western European counterparts. However, women remain noticeably absent from the public sphere and face significant institutional barriers to stable, long-term employment (Barsoum, 2020; Wahba & Assaad, 2017). Family policies are underdeveloped and have not helped reduce the tension between women's housework and care demands and their work in the labour market (Barsoum, 2020). Further, the structure and functioning of the Egyptian family remain distinctly different from that of families in North America and Western Europe.

Since the beginning of the 21st century, the education and employment patterns of Egyptian women have undergone noticeable changes. The rapid expansion of education since the 1960s has been successful in reducing the gender enrolment gap at most levels of education (Elbadaway, 2015). Between 1970 and 2019, for example, the number of women enrolled in secondary education increased from 20% to 90% (World Bank, 2021). Improvements in women's employment in Egypt are also notable, albeit to a lesser extent and predominantly in the informal sector (El-Mallakh, Maurel, & Speciale, 2018). These changes have occurred alongside other expected and unexpected familial and sociopolitical developments: changing breadwinning arrangements (El-Mallakh et al., 2018); rising fertility rates (Krafft, 2020); and the Arab Spring.

Egypt's patriarchal social system attaches great importance to traditional gender roles and a strict division of household responsibilities. The amount of time men devote to housework is negligible, while women's roles as primary caregivers and housewives persist, despite women being equipped with better education than in the past (Assaad, Krafft, & Selwaness, 2017; Nazier & Ezzat, 2021). Meanwhile, in the labour market, the rate of employed women has been consistently lower than that of men, with few socially acceptable occupations for women outside of those found in the public sector (Barsoum & Abdalla, 2020; Constant, Edochie, Glick, Martini, & Garber, 2020). Even when employed, women occupy fewer stable positions and are routinely paid less than men (Said, 2015). These gender differences in education and employment, among other things, have earned Egypt an overall gender inequality ranking of 116th out of 189 countries around the world (Human Development Report, 2019).

The family occupies an important position in Egyptian society. It is responsible for shaping the behaviours of men and women, particularly with regard to marriage and childbearing. Marriage is almost universal, with only 1.7% of women remaining unmarried by the time they turn 50, compared to 13% of women in the United Kingdom (El-Zanaty et al., 2015; Office for National Statistics, 2017). Participating in the labour market does not appear to influence whether women delay or opt out of marriage (Salem, 2016). Divorce is relatively rare (Salem, 2015) and considered to be socially irresponsible (Mendoza, Tolba, & Saleh, 2020). Upon marriage, women are expected to begin childbearing, and a culture of son preference means ongoing pressures to birth a son (Inhorn, 1996; Krafft, 2020). Over a quarter of women aged 25–49 years have birthed their first child by age 20 (El-Zanaty et al., 2015) and, based on the 2013 Egypt Demographic and Health Survey, most women have borne an average of 3 children by age 30 (Radovich et al., 2018).

The gender revolution in Egypt appears to have reached a standstill. Progress made towards gender equality in the public spheres of paid work and education has not translated into greater gender equality in the family and marriage. The reasons for this are unclear and warrant further investigation. To explore the everyday realities of women in modern-day Egypt, this thesis focuses on three key dimensions of gender relations in the family: women's employment stability; intimate partner violence (IPV) against women; and household decision-making.

Work and family lives are interdependent and likely to impact upon each other. The way these spheres interact has implications for women's well-being and empowerment. The aim is to gain a better understanding of how gender inequality is (re)produced intergenerationally, maintained, and contested at the work-family interface in contemporary Egypt. Informed by resource and feminist theories, I comparatively assess the role played by various types of resources and the potential confounding influence of cultural norms in shaping women's short- and long-term empowerment.

My analysis begins with the natal family, where I examine the intergenerational relationship between mothers' employment and women's (daughters') own employment stability. Several trends have emerged in the Egyptian labour market. First, the downsizing of public-sector employment in Egypt has meant fewer employment opportunities in what is widely considered the family-friendly alternative to private-sector employment (Barsoum, 2020; Barsoum & Abdalla, 2020). Second, informal employment in the form of short-term, temporary, or seasonal work contracts is on the rise (Wahba & Assaad, 2017; Wahba, 2009). The percentage of women in informal employment doubled from 20% in 2008 to 40% in 2017 (Constant, Edochie, Glick, Martini, & Garber, 2020). Not only are women today struggling to find work that is compatible with domestic responsibilities, but they face less-stable employment prospects which frequently involve breaks in their career. Although these issues have garnered substantial attention in the literature, they have not been examined from an intergenerational perspective in Egypt. It remains unclear whether mothers' employment facilitates daughters' employment stability, and what the underlying mediating and moderating mechanisms are. Thus, the first empirical chapter of this thesis answers the following questions:

1. How does maternal employment during women's adolescence shape daughters' subsequent employment stability? Does women's (daughters') own education mediate the association between mothers' employment status and their daughters' employment stability? Does the employment sector moderate the association between mothers' employment and daughters' employment stability?

Having looked at how women's employment stability relates to their mothers' employment, I next turn to gender relations in marriage. Specifically, I examine the determinants of physical and psychological IPV against women in the family, and whether there is variation pre- and post-Arab Spring. Previous studies show that women in Egypt are exposed to high rates of

physical and psychological IPV, despite rising levels of female education and employment in the country (Duvvury, Marcos, Gadallah, Attia, Adly, Maged, & Haddad, 2015). Yet, societal consensus continues to be that IPV against women is a private matter that occurs within the confines of the home and therefore, remains outside the purview of public or legal intervention (Ammar, 2006). As a result, existing IPV legislation in Egypt, for the most part, disregards hard-to-detect or less severe forms of violence. This means that women exposed to non-physical forms of IPV have little family or state protection. Moreover, studies on IPV against women in Egypt tend to be governorate-specific and focus predominantly on Upper Egypt where IPV against women is markedly higher than in other areas (Yount, Zureick-Brown, & Salem, 2014; Yount, 2011; Yount 2005a).

The conditions resulting from the Arab Spring encouraged the reallocation of breadwinning responsibilities (El-Mallakh et al., 2018) and in many instances, necessitated women's employment. The second empirical chapter, therefore, explores how these new gender arrangements relate to women's risk of different forms of IPV, as formulated in the following question:

2. Do women's resources—defined as their education and employment—and gender performance determine their risk of physical and psychological IPV? And does this relationship vary pre- and post-Arab Spring?

The final part of my empirical analysis focuses on women's transition to motherhood in marriage. I study how women's fertility outcomes, and the patrilineal pattern of such outcomes, can shape household decision-making power between husband and wife. I also test whether the relationship between women's patrilineal fertility—that is, having at least one son—and household decision-making varied with their employment and educational status. The decline in fertility observed in North America and Western Europe has been partly attributed to the rise in women's education and labour force participation. The effects of women's education and employment in Egypt have been more complex, with several studies reporting a reversal of the fertility decline observed at the end of the 20th century. The total fertility rate declined from 5.3 in 1980 to 3.0 in 2008, before increasing again to 3.7 in 2013. At the same time, preference for sons persists (Rossi & Rouanet, 2015). These trends may reflect gender norms, which stress

the importance of childbearing and the need for male heirs. Against the patrilineal familial tradition in Egypt, my third empirical chapter answers the following question:

3. Is there a link between women's patrilineal fertility and household decision-making power? If so, does this relationship differ by women's education and employment status?

1.1 Key contributions of the thesis

By looking into various, interconnected dimensions of gender relations in the Egyptian family, this thesis makes a number of contributions to work-family and gender research. Focusing on distinct dimensions of gender inequality at the work-family interface, each empirical chapter provides new, in-depth insights into our understanding of gender inequalities in the Egyptian context.

First, it sheds new light on the different mechanisms that contribute to the intergenerational reproduction of gender inequality in the Egyptian labour market. The findings draw attention to the importance of intergenerational resource transfers and intergenerational same-sex role models in determining women's employment stability. They suggest that we can enhance women's economic empowerment by focusing more attention on females during the key developmental period of adolescence. In particular, the results extend the research on gender and power in Egypt through an intergenerational lens. They show that mothers' employment exerts direct and indirect (via daughters' education) effects on daughters' employment stability, and how institutional set-ups of the employment sector can weaken or strengthen these relationships.

Second, the thesis explores whether the event of the Arab Spring shapes the relationship between women's resources and their risks of less IPV—i.e. whether women have become more able to leverage their resources, such as employment, to reduce their experiences of IPV at home after the Arab Spring than before it. I argue that the Arab Spring necessitated women's employment and may have made it more acceptable for women to work. The findings show that women's education and employment reduce their risk of experiencing IPV. The investigation into the potential of the Arab Spring to have reconfigured gender relations between men and women demonstrated the limitations of these types of revolutions in

empowering women. Specifically, women's employment did not prove to be more effective in preventing or reducing their risk of IPV after, compared to before, the Arab Spring. More generally, the results contribute to our understanding of IPV against women in Egypt and its determinants in the context of economic and sociopolitical change.

Third, the empirical and theoretical contributions of this thesis add evidence to long-standing debates over whether cultural norms trump economic and non-economic resources as a source of power within marriage for women in Egypt. Given the persistently high fertility levels and son preference, alongside women's rising levels of education and to a lesser extent employment, I explore the effects of cultural resources, and their interaction with education and employment, on women's marital power. The findings suggest that among married women, patrilineal fertility is an increasingly relevant predictor of their household decision-making power. It also underscores how women's power in marriage can depend on patrilineal kinship arrangements. Furthermore, it shows that, while women's education and employment are important, they alone are not enough to empower women and raise their status in the household.

In doing the above, the thesis addresses some key research gaps and methodological limitations of previous studies. First, the assumptions used to assess gender inequality in Egypt are often based on Eurocentric notions of gender and power. International organisations such as the United Nations have been committed to promoting gender equality and women's empowerment in North America and Western Europe through education and employment. This has helped reduce gender gaps in education and employment (Blossfeld & Kiernan, 2019). In Egypt, however, similar efforts are hampered by the continued emphasis on family unity, and gender disparities in some areas of education and employment remain (Assaad, Hendy, Lassassi, & Yassin, 2020; Krafft, Assaad, & Keo, 2019). Further, the meanings attached to women's education and employment as potential sources of power can differ from one society to another and change over time (Samari, 2019a; Yount, 2008). Existing empirical literature on and theorisations of women's empowerment focuses disproportionately on North America and Western Europe. As a result, these theoretical models have been subjected to very few empirical tests in non-Western settings and limited attention has been given to cross-cultural variations. Putting these theories to the test in the Egyptian context can help enhance our understanding of the nature and extent of gender inequality in Arab Muslim-dominant societies.

Secondly, the thesis offers two methodological contributions. First, my research expands on cross-sectional studies of intergenerational relationships between parents and their children in Egypt. In Chapter 3, I go beyond a dichotomised definition of employment to one that accounts for whether women remained employed or not over a long period of their life course. I use nationally representative longitudinal data to track changes in women's employment status and uncover the enduring effects of maternal employment on their daughters' employment stability.

Second, as the relationship between work and family dynamics are mutually shaping, a novel estimation method is used to address issues of reverse causality and omitted variable bias in understanding the impact of women's employment on their victimhood of IPV. In Chapter 4, I apply an instrumental variable approach to account for the potential endogeneity of women's employment and their risk of IPV. I exploit the number of usual household residents and the governorate average of women's employment as instruments for women's employment. To the best of my knowledge, this is the first empirical research to account for the endogeneity of women's employment in predicting IPV in Egypt.

Taken together, the three interrelated empirical chapters trace through the women's life course from adolescence, marriage and to their own experiences of motherhood, in providing a life-course understanding of the reproduction of gender inequalities. It illustrates the ways in which women acquire economic resources at earlier life stages and how these resources come to shape their lives and experiences of gender inequalities in the family and marriage. Therefore, as a whole, this thesis demonstrates the usefulness of the life course perspective in understanding how gender inequalities are produced and reproduced throughout women's lifespans.

1.2 Organisation of the thesis

This thesis is divided into six chapters comprising: Chapter 1 – Introduction; Chapter 2 – Literature review; Chapter 3 – Women's employment stability; Chapter 4 – IPV against women; Chapter 5 – Women's marital power; and Chapter 6 – Conclusion.

Chapter 2 begins with a review of the overarching theoretical framework. It introduces gender as a social structure that operates across individual, interactional, and institutional levels of society. It also provides an overview of women's resources and gender norms in Egypt.

Emphasis is placed on gender relations in the family, at work, and recent trends in marriage and fertility. It illustrates changes in women's education and employment, and the gender gaps in both. Where possible, comparisons are made between the demographic and social trends found in Egypt and those found in North America and Western Europe. It then moves on to a discussion of the work-family interface and concludes by reviewing my three key dimensions of gender relations on which I focus in this thesis: employment stability; IPV against women; and household decision-making. I discuss the importance of and interrelations between the three dimensions in the context of women's work-family arrangements.

Next, I present the three empirical chapters, which explore different dimensions of gender inequality in the Egyptian family. Building on the literature review and overall theoretical discussion in Chapter 2, I include in each of the empirical chapters a more in-depth discussion of theories that are specifically relevant to the issues under scrutiny, and I also introduce the specific datasets and research methods used to answer the particular questions raised in each empirical chapter. The order of the chapters follows women's life trajectories in Egypt. I start from the mother-daughter relationship, which is the first, and often strongest, relationship formed in a woman's life. Then I move on to gender relations in marriage as an important and expected event for most Egyptian women. Here, I focus on women's physical and psychological well-being in marriage and their risks of physical and psychological IPV. Finally, given the cultural significance of childbearing, I focus on women's fertility outcomes and their conjugal power in marriage.

Chapter 3 focuses on the association between daughters' employment stability and their mothers' employment during the daughters' adolescence as a formative life stage where work values and gender roles begin to mature. Most prior research on intergenerational transmission of employment has relied on point-in-time outcomes. I draw on the 2006, 2012, and 2018 waves of the Egypt Labour Market Panel Survey (ELMPS) to assess women's employment stability. Using structural equation modelling, I found that maternal employment is strongly linked to daughters' employment stability. The employment sector moderates this association such that the relationship between mothers' employment and their daughters' employment stability was stronger for public- than for private-sector employment. Additionally, I found

some evidence that women's education mediates the relationship between mothers' employment and daughters' employment stability.

Chapter 4 explores the relationship between women's resources, gender performance, and different forms of IPV. It is well-established that women in Egypt are at a high risk of experiencing IPV (Ammar, 2006; Duvvury et al., 2015). However, most research on the subject has been region-specific and focuses mostly on physical forms of violence. I used two-stage least squares regression to analyse data from the 2005 and 2014 Demographic Health Surveys. I also differentiate between physical and psychological forms of IPV against women. I found that women's education and employment, in both absolute and relative terms, reduced their risk of physical IPV, whereas these same variables were not significantly associated with their risk of psychological IPV. These results did not vary before and after the Arab Spring.

Chapter 5 explores how women's patrilineal fertility and their resources, defined in terms of their education and employment, jointly determine their household decision-making power. I used a combination of random effects and fixed effects methods to analyse data from the 2006, 2012, and 2018 ELMPS. Women's patrilineal fertility is found to be positively associated with women's decision-making power. The findings also corroborate those of previous studies on the importance of women's employment in determining their household decision-making power. However, women's education and employment do not moderate the relationship between women's patrilineal fertility and their household decision-making power.

Chapter 6 summarises the main findings and theoretical contributions of the thesis. Bringing the empirical chapters and results together, it provides an integrated account of how women's resources and cultural norms interact to shape gender inequality in the family, demonstrating the extent to which women's experiences across the life course in Egypt may have diverged from their North American and Western European counterparts. Based on the empirical findings, I provide a few policy recommendations. Finally, I outline the limitations of the thesis and suggest potential avenues for future research.

2 Literature review and research context

In this chapter, I first outline an overarching theoretical framework, which I use to conceptualise gender relations within the family, marriage, and at work. This is followed by a discussion of the sociocultural context of Egyptian society and a summary of recent social and demographic trends which relate to the focus of this study. Particularly, when discussing the Egyptian context, I pay attention to how the theoretical framework and concepts such as resources, power, and gender norms operate in the Egyptian family and labour market. Next, I discuss the bidirectional nature of work-family conflict before finally introducing my three main dimensions of gender relations: women's employment stability, intimate partner violence (IPV) against women, and household decision making; and show the relationship between these dimensions and gender equality.

The theoretical underpinnings and mechanisms of gender inequality, as they relate to the abovementioned dimensions, are discussed in more detail in the individual empirical chapters which follow. Within each chapter I outline how theoretical and conceptual commitments have motivated my specific research questions and hypotheses, justify my methodological approach, and explain the empirical findings. In doing so, the analysis presented in each chapter can be specifically situated and located within discussions of theories and social contexts that relate directly to the particular issues examined in different empirical chapters.

2.1 Gender as a social structure

To explore how gender norms and resources intersect to affect women's experiences in the family and at work, Risman's (2004) multi-level conceptualisation of gender as a socially constructed system is taken as the overarching theoretical framework. This approach integrates various theoretical traditions and draws attention to a wide range of processes that help produce, maintain, and transform gender inequalities.

The literature offers different ways of understanding gender. These are often focused on the role of internalised gender norms, which reflect common beliefs about how men and women should act, and control over and access to resources, which is determined by gender norms. When considering the effects of resources and gender norms, at different life stages, on gender inequality, one particularly useful starting point asserts gender as a social structure (Risman, 1998, 2004). This gender structure has implications for female agency, social relations, and the distribution of resources. Specifically, gender is assumed to operate at three distinct but mutually reinforcing levels: the individual, interactional, and institutional (Risman, 1998, 2004; West & Zimmerman, 1987). A combination of processes contributes to the production of gender differences at each of these three levels

At the individual level, the focus is on the development and socialisation of gendered selves (Risman, 2004). The literature in this area tends to emphasise social learning and internalisation processes (Baum, 2004; McGinn et al., 2019). Gender socialisation, for example, begins at an early age and is a key contributing factor to the construction of gender identities. The first opportunity for children to familiarise themselves with their social environment occurs within the family. It teaches socially appropriate gender orientations, ideologies, and behaviours, according to the child's gender, and determines the paths that men and women are expected to embark on as adults. In most societies, men and women are socialised differently, and a number of cultural influences appear to justify these differences (Goldberg et al., 2008; Lam, McHale, & Crouter, 2014). Resources, too, play a role in developing one's gender identity. For example, access to and control over resources—such as education and employment—can encourage women to identify themselves as being as capable as their male counterparts (Zhou, 2020).

The interactional level looks at status expectations and the processes through which men and women construct and reconstruct gender. The focus is placed on social interactions and how the gender structure persists through everyday repetitions of gendered behaviour (Risman, 2004). These behaviours, and the way in which gender is enacted, often reflect dominant sociocultural beliefs such as who is expected to do the housework, take care of the children, or work in the labour market. Conceptualising gender at the interactional level is broadly consistent with the 'doing gender' perspective, which argues that gender is something that is routinely performed and therefore constituted on a daily basis (Connell, 1987; West & Zimmerman, 1987). Aside from sociocultural norms, significant scholarly attention has also

been paid to understanding the role resources play in allowing men and women to potentially opt out of doing gender.

Finally, at the institutional level, the distribution of resources is gendered. The policies and organisational structure of institutions all have implications for the types of domestic and work roles that men and women occupy (Risman, 2004). In education, pre-existing gender expectations continue to shape men's and women's degree choices, with men often pursuing more economically viable majors (Angel-Urdinola & Semnali, 2010). The organisation of the labour market, including policies that may alleviate work-family conflict, have been shown to impact women's occupational preferences and employment stability (Barsoum, 2004, 2010, 2020; Constant et al., 2020). Similarly, gender inequality in marriage can persist because of patriarchal family laws which serve to subordinate women in the family and limits their access to resources in the case of divorce (Al-Sharmani, 2013). Other institutional aspects that perpetuate resource inequalities between men and women include wide gender pay gaps, gender discrimination in inheritance, and occupational gender segregation (Assaad, 2014; Biltagy, 2014).

A key feature of each of these levels is the interplay between resources and cultural norms. On the one hand, cultural norms play a part in determining the behaviours that men and women are expected to exhibit. They are introduced in childhood, through processes such as socialisation; reinforced during social interactions; and embedded in institutions. On the other hand, there is room for agency and the modification and rejection of cultural norms. Resources can either enhance or constrain opportunities in childhood and throughout the life cycle, such as in marriage and in the labour market. In each of the substantive chapters, I illustrate how the individual, interactional, and institutional components of the gender social structure are closely intertwined and interact with each other to (re)produce gender inequality at the different life course stages: during adolescence and as women enter marriage and motherhood. Specifically, I discuss the theoretical considerations pertaining to the interplay between resources and gender norms at each of the three levels in the specific context of the life course stage and family relations under scrutiny.

2.2 Understanding gender and resources in Egypt

The family is often conceptualised as an economic unit characterised by a complex set of exchanges. Income that is generated in the labour market is traded for goods and household services. Based on the notion of comparative advantage, a specialised division of labour emerges in which men and women become adept at different tasks (Becker, 1991). Women undertake caregiving roles; they attend to household chores and socialise children into the norms and expectations of a given society. Men, relieved of the responsibilities of housework and childcare, take on paid work in the labour market. Women's roles in the household thus remain distinct from those of men, which helps maximise family well-being and productivity (Becker, 1991).

The importance of the family as a key economic institution is illustrated in various studies examining the distribution of household labour and home-based production. For instance, in Mexico, there is evidence that families pool their resources and barter (Miraftab, 1994), while in India, women take up specialised roles in the household such as garment production for sale outside the home (Kantor, 2003). In Egypt and Tunisia, daily life similarly involves dividing household and market tasks between the husband and wife (Nazier & Ezzat, 2021).

Drawing on this exchange logic, resources have frequently been used to explain the distribution of power in the family and the comparative status of husbands and wives. The idea is that power in the family is shaped by the economic and non-economic resources that men and women individually bring to the household (Hesse-Biber & Williamson, 1984). Resources have traditionally been defined in terms of education and employment, although extensions incorporating other types of resources, such as the level of commitment or involvement in a relationship, have been seen in the literature (Safilios-Rothschild, 1967). The individual who possesses the most resources is better able to achieve desired goals, to bargain their way out of unfavourable circumstances, and has greater control over their life (Anderson, 1997; Hu, 2019; Kishor & Subaiya, 2008; Wang, Lou, & Zhou, 2020). Men's breadwinning role has traditionally allowed them to contribute more to household earnings, which often tilts the balance of power in their favour. By comparison, women's domestic roles do not provide the same opportunities to accumulate resources. The resource perspective was conceptualised through the work of Blood and Wolfe (1960), with its earliest application in the analysis of intra-household decision making. Various extensions of resource theory to family relations

have been used to explore other research questions, such as men's use of violence in interpersonal relationships (Goode, 1971) and intergenerational outcomes between parents and children (Becker & Tomes, 1979, 1986).

Although resource theory has been widely applied to the study of gender inequality, its foundations reflect understanding and meanings as it applies to North American and Western European contexts. Women's education and employment are considered important sources of power that create opportunities and afford women greater access to and control over resources (Bowlus & Seitz, 2006; Luz & Agadjanian, 2015). They are viewed as being essential to women's well-being and their ability to challenge gender inequality. In the United States, for example, there has been a significant increase in women's education alongside improvements in their labour force participation (Blossfeld & Kiernan, 2019). These trends, in turn, have been associated with declines in gender inequality in the family and in marriage (Anderberg et al., 2018; Bowlus & Seitz, 2006; Vyas & Watts, 2009)—a result that resonates well with the dominant Eurocentric discourse that education and employment promote female autonomy and independence.

This theoretical viewpoint may not hold true in many of the patriarchal societies found in the Arab world. Modern Western European cultures tend to be individualistic, whereas in Egypt, greater emphasis is placed on collectivism, and family well-being often supersedes individual needs (Al-Sharmani, 2013; Yount, 2005a). Viewing the family as a single economic unit that distributes resources to its members in a way that maximises household welfare can mask inequalities within the family and between men and women (England & Killbourne, 1990). Moreover, cultural norms and gendered expectations may interfere in the relationship between resources and reductions in gender inequalities. For example, female education is unlikely to lead to improvements in women's status in Egypt if its merits are understood in terms of socialising children and the reproduction of cultural norms (Mensch et al., 2003). Similarly, work-family conflict can have an impact on women's economic empowerment if most women find themselves in low-paying, unstable occupations.

Such observations lead to questions about whether resources such as education and employment could help to reduce gender inequalities in Egyptian families. Has the rise in

female education and the reversal of the gender gap in education reduced gender inequality in marriage? Does female employment, despite the negative connotations associated with women's paid work in Egypt, lead to improvements in their status? Has the relationship between female resources and gender inequality changed or remained the same amid recent socio-political events, such as the Arab Spring? These questions are relevant considering that empirical tests of resource theory have been applied predominately to the United States or Western Europe and, in some cases, have produced disparate findings (Anderberg, Rainer, Wadsworth, & Wilson, 2016; Chung, Tucker, & Takeuchi, 2008; Zuo & Bian, 2001).

2.2.1 Women's education as a resource

The educational system in Egypt has long maintained the dual objectives of preserving the cultural status quo and accelerating economic growth. It is a means by which men and women are socialised into traditional gender roles in addition to being prepared for the labour market (Faksh, 1976; Mirshak, 2020). In its capacity to influence beliefs and attitudes, education has frequently been used as an indoctrination tool aimed at promoting loyalty to the state and the rejection of Western hegemony (Assaad & Barsoum, 2019; Ibrahim, 2010). The significance and rationale for education in Egypt is therefore to produce individuals whose skills and views further the state's agenda, not individuals who might challenge the existing social or political order.

Efforts for educational expansion took on heightened importance in the 1950s. During this time, high rates of illiteracy and glaring inequalities in access to education were the main impetus behind the expansion of higher education in Egypt. Almost three-quarters of Egyptians were illiterate (Hyde, 2013) and only an elite minority of Copts, Jews, and the foreign-born population could afford to send their children to school (Faksh, 1976). The process of educational expansion involved the extension of compulsory schooling, the development of technical and vocational education, and a nationwide upgrading of educational facilities (Faksh, 1976; Howard-Merriam, 1979). To accommodate its growing population and ensure accessibility for all, education at all levels was made free and the number of universities in the country grew (Assaad et al., 2020; Faksh, 1976). However, this ultimately came at the expense of declining educational quality (Assaad, 1997).

The expansion of education brought with it substantial improvements in women's education. The number of illiterate women decreased, and enrolment rates increased greatly, particularly at the secondary level. For instance, the proportion of literate women increased from 12% in 1960 to 16% in 1976 (Howard-Merriam, 1979). Female primary and secondary school enrolment rates also went up. Women's primary school enrolment rate increased from 52% in 1960 to 55% in 1974, and women's secondary school enrolment rate increased from 9% to 28% over the same period (Howard-Merriam, 1979).

The next era of educational reform in Egypt began in the 1980s and focused on initiatives for the privatisation of education and the expansion of economic ties with the West. This system allowed private schools to operate, with many of these institutions delivering better education than public schools (El Baradei & El Baradei, 2004; Mirshak, 2020). Those educated in private schools held superior qualifications, had a greater likelihood of attending university, and were offered more prestigious jobs than their state-educated counterparts (Krafft, Elbadawy, & Sieverding, 2019; Loveluck, 2012; Mirshak, 2020). The privatisation of education thus undid more than a decade of efforts to equalise educational opportunities in the country. Further, as Western influences began to take root, education became more secular and the role of Islamic education diminished (Ibrahim, 2010).

Alongside these changes, however, the goal of improving education in the country, especially women's education, has remained. Strategies such as the Education Enhancement Program have focused on improving women's access to education in the most impoverished governorates by ensuring universal primary school attendance and completion (El-Berr, 2004; Ibrahim, 2010). In 2011, the gross female primary school enrolment rate reached 96%, up from 67% in 1984 (World Bank, 2021). Female primary education completion rates have been on the rise—between 1979 and 2017 female primary education completion rates increased from 23% to 97% (World Bank, 2021). The program also aimed at increasing female students' retention rates—between 2011 and 2012 the percentage of female dropouts at primary school level was below 1% (UNICEF, 2011).

Significant progress has been made in narrowing some of the gender gaps in education. Girls are less likely than boys to drop out during the pre-secondary school years. For instance, 9.6%

of boys drop out of preparatory school compared to 7.3% of girls (Roushdy et al., 2011). Moreover, since 2012, women and men have earned an almost equal proportion of university degrees and, in some urban areas, a higher proportion of women than men possess university degrees (Elbadawy, 2015).

Not only have women managed to catch up with their male peers in terms of university-level education, but today women are also obtaining more years of schooling than ever before. In 1990, women were completing an average of 2.2 years of schooling (UNDP, 2020b). By 2019, however, this number nearly tripled to 6.8 years of schooling (UNDP, 2020b). A similar increase is observed for men. In 1990, men were completing an average of 4.9 years of schooling compared to 8.1 years of schooling in 2019 (UNDP, 2020a). Although these trends indicate improvements in school attendance and retention rates, the country still lags behind its North American and Western European counterparts. For instance, the 2019 estimates for the United Kingdom and the United States show that women are completing an average of 13.2 and 13.5 years of schooling respectively—almost twice as many years of schooling than Egyptian women (UNDP, 2020b).

Geographic location and socioeconomic status have contributed to these differences by determining whether women attended school in the first place. Women in rural areas were significantly less likely to have enrolled in education compared to their urban peers. For example, in rural Upper Egypt, 22.1% of women have never attended school compared to 4% of men (Roushdy et al., 2011). In the urban governorates, only 4.1% and 2.5% of women and men, respectively, have never attended school (Roushdy et al., 2011). Furthermore, only 1% of women from the richest quintiles have never attended school compared to 27% of women from the poorest wealth quintiles (Roushdy et al., 2011).

Changes to the Egyptian education system have been strongly linked to the broader political, social, and economic context. As a result, modern-day education is a product of the different, and sometimes contradictory, reforms undertaken over the years. Notably, education is characterised by an increase in educational facilities but not necessarily in educational quality, a mixture between secular and religious educational models, and a trend of privatising education, resulting in growing inequalities in access to schooling. All these developments have impacted female literacy and educational attainment, with women today comprising most of the students in higher education. This raises questions about the utility of women's

education—is it a means of obtaining employment and enabling women's empowerment, or is its value understood in terms of better family functioning and childcare?

2.2.2 Women's employment as a resource

Egypt struggles with very low female labour force participation. The average female employment rate is 20%, which is far below the current world average of 50% (World Bank, 2021). Female employment rates have fluctuated over the past few years but have remained within a low historical range. In 2006, the female employment rate was 20%, increasing to 23% in 2014, before sharply declining to 13% in 2020 (CAPMAS, 2014, 2020).

There is considerable variation in women's labour force participation across women's level of education. The data suggest that women's labour force participation begins to increase with vocational secondary and post-secondary education, with the lowest rates of employment among the illiterate and general secondary graduates (Assaad & Krafft, 2015; Roushdy & Sieverding, 2015). For women aged 15 to 35 years, only 9.3% of the illiterate, 13.5% of those with primary level education, and 9.9% with general secondary education were in the workforce in 2014 (Roushdy & Sieverding, 2015). These estimates increase to 16.6% and 43.5% for women in the same age group with vocational secondary and university level education, respectively (Roushdy & Sieverding, 2015).

Unlike the educational gains noted earlier, gender differences in labour force participation persist. The country has the lowest male unemployment rates and the highest female unemployment rates among all the Middle East and North African countries, demonstrating some of the largest gender gaps in employment rates in the region (OECD, 2020). In both urban and rural areas, the male employment rate is almost three times the female employment rate. In 2012, only 25.6% of the urban female population was in paid employment compared to 78.9% of their urban male peers (Hendy, 2015). Similarly, 21.1% of the rural female population was in paid employment compared to 81.2% of their rural male peers (Hendy, 2015).

Several explanations have been put forward to account for these gender differences. First, women in Egypt often enter the workforce out of economic necessity, taking up low paying jobs mostly in the informal sector (El-Mallakh, Maurel, & Speciale, 2018; Singerman &

Hoodfar, 1996). Second, patriarchal gender norms continue to limit women's labour force participation by dictating the type of work they can obtain and discouraging employment that requires long hours or is considered too strenuous (Barsoum, 2019; Constant et al., 2020; Hoodfar, 1990). Third, the unequal distribution of unpaid household and caring responsibilities acts to the detriment of women's employment. Research has found that employed women continue to devote most of their time to housework (Nazier& Ezzat, 2021) and, regardless of their employment status, spend approximately 31 hours a week on housework compared to 3 hours for men (Assaad, Krafft, & Selwaness, 2017; Roushdy, Krafft, Harbour, Barsoum, & El-Kogali, 2011)). Fourth, there is a lack of government-initiated work-family policies that address the needs of the female workforce. Short paid maternity leaves, inflexible work arrangements, and few part-time jobs have meant that women typically exit the labour market following marriage or the birth of a child (Assaad, Krafft, & Selwaness, 2017; Barsoum, 2019).

2.3 Understanding gender norms in Egypt

Gender plays an important role in configuring many aspects of family and work in Egypt. It determines one's identity and roles in the realm of both public and private life. The most notable characteristic of the Egyptian family is its patriarchal structure. Traditional definitions of men as breadwinners and women as homemakers are the norm and continue to govern relations between family members and spouses. Therefore, existing gender norms tend to privilege men, who typically hold more authority in the family than women.

2.3.1 The Egyptian family

Family is one of the most important social institutions in Egyptian society. Given the country's underdeveloped welfare system, it provides key benefits and services to its members. It helps with the provision of child and elderly care, home-based work, financial security, and emotional support (Inhorn, Birenbaum-Carmeli, Tremayne, & Gürtin, 2017; Yount et al., 2012). Family is also where children are first introduced to sociocultural norms and expectations. For instance, children are taught how to dress appropriately, how to behave in public and in private, and who to look to for authority (Ghannam, 2013; Mensch et al., 2003; Rugh, 1984). Although there has been a noticeable decline in extended family living arrangements towards nuclear households, frequent family contact is still the norm (Angeli & Novelli, 2019).

The typical Egyptian family follows a patriarchal and patrilineal organisational structure. The family lineage is based on the father and men typically inherit more than women (Rugh, 1984). Furthermore, different tasks and responsibilities are allocated to men and women (Mensch et al., 2003). Men spend most of their time in the labour market as family providers, and in exchange for protection and financial maintenance, women are expected to remain in the home as devout wives and mothers (Rugh, 1984; Singerman & Hoodfar, 1996). The transition into motherhood leads to a new set of responsibilities which involve ensuring children's survival and socialisation. A mother is expected to be closely involved in her children's upbringing. She attends to their physical and emotional needs and works on ensuring religious adherence (Joseph, 1993; Inhorn et al., 2017). By comparison, fathers' work demands can limit the time they have available to interact and bond with their children (Singerman & Hoodfar, 1996).

These family relations are based on the religious ideal of gender complementarity and not equality. Men and women are viewed as interdependent, gifted with different capabilities, and therefore are expected to work together instead of competing for the same rights or opportunities (Yount et al., 2012). This, as argued by many proponents of a religious-based law, creates a 'natural' and sustainable gendered division of labour (Predelli, 2004). Maintaining these gender arrangements is assumed to lead to more harmonious family relationships and works to ensure social order.

Aside from gender, social status is also conferred according to age. As men and women age, power in the family is transferred to the eldest member (Olmsted, 2005). Younger men might defer to older men or senior women, who are thought of as the more experienced decision makers (Joseph, 1996). Senior women, such as mothers, aunts, and grandmothers, hold greater authority relative to the more junior women of the family, such as daughters and the newlywed (Joseph, 1996). Specifically, obedience and respect for the elderly have dictated family and social life in Egypt for decades. For this reason, younger family members are unlikely to challenge these age-based hierarchies.

Thus, gender relations in Egyptian families differ significantly from those outside the Middle East and North African context. Gender and age are key factors influencing the behaviours of family members. Clear distinctions between what is considered "women's work" and "men's

work" remain justified on cultural and religious grounds. This patriarchal family system has managed to survive over time and raises questions about whether intergenerational ties and transfers play a role in the (re)production of gender inequalities within the family.

2.3.2 Marriage and conjugal relationships in Egypt

Women's status in Egyptian society is firmly tied to marriage. Marriage symbolises the achievement of adult status and it is the only socially acceptable avenue to parenthood (Roushdy et al., 2012), unlike in many Western European contexts and North America where childbirth out of the wedlock has become increasingly accepted over the past few decades (Lesthaeghe, 2010). Following marriage, women are considered part of their husband's kin group, and it is by virtue of their roles as wives and mothers that they obtain economic and constitutional rights (Mendoza, Tolba, & Saleh, 2020; Salem, 2018; Yount, 2005a). After marriage a woman resides with her husband and his family, and shoulders most of the housework (Yount, 2005a). In some rural areas, consanguineous marriage—a union between blood relatives—is practised as a means of strengthening existing kin relations (Weinreb, 2008). Regardless of whom women marry, however, women remain subordinated to men, including their fathers, brothers, and husbands.

Marriage in Egypt is near-universal, despite recent increases in the age of marriage. Between 1998 and 2014, the average age at marriage rose from 19 years to 21 years, respectively (El-Zanaty et al., 1996; 2015). The proportion of never-married women tends to decrease with age: 88% of women aged 15–19 years have never been married compared to 46% of women aged 20–24 years (El-Zanaty et al., 2015). However, the proportion of women who have never-married by age 40 has stayed consistently low between 2000 and 2014 at 1.5% (El-Zanaty et al., 2015; Salem, 2015). Divorce, by comparison, is rare. In 2014, the divorce rate among women aged 20–24 years and 45–49 years was less than 1% and 2%, respectively (El-Zanaty et al., 2015; Salem, 2015).

Although most marriages are nonconsanguineous, marriage to blood relatives is still common. In 2014, 31% of ever-married women were in a consanguineous marriage and the majority were married to a cousin on the paternal side (El-Zanaty et al., 2015). The prevalence of consanguineous marriage differs by urban-rural status: 33% of women in rural areas are married to a blood relative compared to just under 25% of women in urban areas (El-Zanaty et

al., 2015). The incidence of consanguineous marriage is reported to be lowest among educated working women (El-Zanaty et al., 2015; Salem & Shah, 2016).

Family laws relating to marriage, divorce, and inheritance are based primarily on Islamic interpretations (Shari'a). These laws have been argued to contribute to women's subordination in the family by reinforcing patriarchal gender norms and values. Among the most contested rulings is the spouses' right to wifely obedience. A husband is obligated to support his wife and children financially and failure to do so is considered to be a religious affront (Al-Sharmani, 2013). This support comes in many forms, including the provision of food, clothing, and accommodation. In return, a wife must obey and fulfil her husband's needs so long as those needs do not infringe on Islamic principles.

Over the course of the twentieth century, efforts to enhance women's social and legal standing have achieved some semblance of success. The introduction of no-fault divorce (*khul*) in 2000 enables women to divorce without requiring the consent of the husband (Al-Sharmani, 2013, 2017). However, it does involve relinquishing all their financial rights, including any sum of money given by the bride to the groom at marriage (*mahr*). Additional reforms have included new marriage contracts with the option for women to stipulate conditions, and the creation of family courts (Al-Sharmani, 2013).

Many of the European and North American societies have introduced a diversity of alternatives to marriage. Non-cohabiting unions, where intimate partners choose to have separate living arrangements, has become socially recognised and accepted in countries like the United Kingdom (Coulter & Hu, 2017), the United States (Strohm, Seltzer, Cochran, & Mays, 2009), and France (Régnier-Loilier, Beaujouan, & Villeneuve-Gokalp, 2009). Rates of self-marriage and voluntary singlehood are on the rise (Bellani, Esping-Andersen, & Nedoluzhko, 2017; Lahad & Kravel-Tovi, 2020). A growing proportion of those who do get married have the option to divorce if the relationship fails (Yodanis, 2005). By comparison, marriage in Egypt continues to be an expected and almost non-negotiable part of women's life course. It brings with it strongly prescribed gender relations and imposes on women a new set of responsibilities associated with being a wife, a mother, and a daughter-in-law. Marital coresidence is the only socially acceptable living arrangement. Families pass on social status and maintain their wealth

through marriage, and divorce continues to be stigmatised. Moreover, women's rights and resources in marriage are constrained and highly regulated. Given this context, what implications do these norms have for women's empowerment and resources in the family and marriage?

2.3.3 Childbearing in the Egyptian family

Marriage remains the only acceptable institution for childbearing in Egyptian society. Non-marital childbearing is rare; specifically, less than 1% of births occur outside of wedlock (Samari, 2017b). Instead, women are encouraged to begin having children shortly after marriage (Radovich et al., 2018). The demand for male heirs, to ensure the survival of the father's lineage and the preservation of family assets, can motivate childbearing. This culture of son preference often manifests in practices that strongly favour boys over girls, such as male priority in access to healthcare and schooling (Chakravarty, 2015; Salem, 2004).

Among OECD countries, the total fertility rate has decreased significantly from an average of 2.7 children per woman in 1970 to just 1.7 children in 2009 (OECD, 2011). Fertility levels in Egypt, in contrast, are very high by Western European standards. The total fertility rate (TFR) in Egypt has dropped significantly from its peak in the early 1960's, but this decline has been far from linear. The TFR fell from 6.7 in 1960 to 5.3 in 1980 and continued to decline, reaching 3.0 births in 2008 (El-Zanaty et al., 2015; Radovich et al., 2017). A reduction in female employment in recent years, among other things, has had an impact on women's fertility (Goujon & Al Zalak, 2018; Krafft, 2020). During the period between 2009 and 2014, the TFR rose from 3.1 to 3.5 births per woman. This increase was highest among women below the age of 30 (El-Zanaty et al., 2015). Nevertheless, the ideal family size has remained stable at three children (Ambrosetti, Angeli, & Novelli, 2019).

Differences in the TFR by region exist. The highest TFR is found in rural Upper Egypt, rural Lower Egypt, and the frontier governorates, with almost 4 births per woman (El-Zanaty et al., 2015). By contrast, the urban governorates have a lower TFR of approximately 2.5 births per woman (El-Zanaty et al., 2015). The TFR increase between 2009 and 2014 was concentrated among women in rural Lower and Upper Egypt (El-Zanaty et al., 2015; Radovich et al., 2018). Meanwhile, data on age-specific TFR's suggest that the highest fertility rates are observed

among women aged 25–29 years in urban areas and women aged 20–24 years in rural areas (Goujon & Al Zalak, 2018).

Global movements led by international organisations such as the United Nations have been successful in promoting female education and employment, which, in turn, has pushed down fertility rates in the United States and parts of Western Europe. Thus, it is fair to say that one of the most puzzling demographic trends in Egypt has been the continuing high rates of fertility, despite women's rising levels of education and their slow entry into the labour market. Childbearing constitutes one of the main objectives of marriage and women's status in the family may be linked to their reproductive outcomes. Specifically, son preference and patrilineality is a prevalent cultural ideal and could be considered as an important predictor of women's empowerment in marriage. Against this background of high fertility and ongoing son preference, can sons function as bargaining chips in marriage? And if they do, is it contingent on women's education and employment?

2.4 The Egyptian labour market

The type of work a woman can and most often engage in is shaped by gender norms. Patriarchal expectations that dictate that women should perform the bulk of housework, and notions of female modesty, impede women's careers. Egyptian men and women tend to be segregated into different employment sectors, with varying consequences for women's economic empowerment as will be discussed below.

2.4.1 Institutional differences between the public and private sector

An employment guarantee scheme introduced in the 1960s has had a long-lasting impact on the Egyptian labour market. The scheme was launched with the aim of guaranteeing employment in the public sector for all university graduates, and later for secondary and technical institute graduates (Assaad & El-Hamidi, 2009). The resultant impact was an increased demand for education, particularly at the secondary and post-secondary levels, and the proliferation of public sector employment (Assaad, 1997; Assaad & El-Hamidi, 2009). Between 1963 and 1967, for example, the proportion of eligible secondary and university graduates increased nine-fold (Assaad, 1997). This helped accelerate public sector

employment, which grew at a rate of 6.9% from 1960 to 1967 and a rate of 7.2% from 1973 to 1982 (Assaad, 1997).

Budgetary and demand pressures accruing in the 1980s reduced the state's commitment to guaranteeing employment, and eventually led to the complete abolition of the policy. The public sector could no longer absorb the influx of graduates, many of whom avoided private sector employment due to less favourable working conditions and pay (Binzel, 2011; Guirguis, 2011). As a result, several restrictive measures were implemented: a reduction in the number of university graduates by limiting enrolments at the university levels, the erosion of public sector wages, and the extension of public sector job queues (Assaad, 1997; Binzel, 2011). For example, the waiting period for public sector jobs could stretch to 13 years in the early 1990s (Guirguis, 2011).

The impact of the employment guarantee schemes on women's employment in Egypt has remained long after the introduction and withdrawal of the policy. First, the gender-blind design of the policy meant that women could, for the first time, compete on an equal footing with their male peers. This resulted in a large increase in the number of women entering public sector employment. The share of women in public sector employment increased from 40.7% to 55.9% between 1976 and 1986 (Assaad, 1997). With the reduction of public sector employment opportunities, women's public sector employment has been declining gradually (Assaad et al., 2020; Barsoum & Abdalla, 2020). Nevertheless, the public sector still employs a larger proportion of employed women than employed men. In 2018, 39% of women aged 15-64 years were employed in the public sector versus 17% of men in the same age bracket (Barsoum & Abdalla, 2020).

Second, existing research suggests that the policy may have augmented the role of education in obtaining employment. Guarantees of employment for the well-educated generated a culture of earning, at the minimum, a secondary level education (Assaad & Krafft, 2014; Assaad, 1997). As a result, secondary and higher-level education for women was, and continues to be, recognised as the main path to employment in the country, particularly for those eager to secure a job in the public sector. In 2012, it was reported that 40% of men and women do not continue with their education after completing secondary school (Assaad & Krafft, 2014). Meanwhile, the proportion of women with secondary and post-secondary education in public sector employment significantly exceeds the number with less than secondary education. In 2018,

among women aged 18-60, 68% with university education or above, 46% with vocational secondary, and only 15% with preparatory education, were employed in the public sector.

Third, the employment guarantee scheme positioned public sector employment as the more women-friendly option to private sector employment. Although men still make up the bulk of the public sector workforce, the employment guarantees contributed to the feminisation of the public sector (Barsoum & Abdallah, 2020). This in turn helped to facilitate a safer work environment for women, with reports of sexual harassment being less prevalent in the public than in the private sector (Barsoum, 2010, 2019).

Other characteristics unique to the public sector have continued to attract the female workforce. Shorter work hours and commutes, greater provision of social services, and superior job security in the public than in the private sector ensure a better work-life balance for women and their families (Barsoum, 2010; Hendy, 2015). For example, more women tend to exit private sector employment than public sector employment following marriage (Krafft, Assaad, & Keo, 2019). Thus, the sectoral differences between public and private sector employment represent a key dimension of the institutional set up of the Egyptian labour market, which leads to the following question: is the institutional context shaping the intergenerational relationship between mother's employment and their daughter's employment stability?

2.4.2 Recent developments in the Egyptian labour market

Recent developments in the Egyptian labour market have continued to stifle women's long-term employment. Informal employment has been on the rise and tends to be characterised by job instability and lower pay (Barsoum, 2015; Wahba & Assaad, 2017). Recent estimates suggest that around 50% of all working women are in informal employment, with this figure increasing for the less-educated and for those residing in rural areas (Rizk & Abou-Ali, 2015; World Bank, 2012). In general, work contracts, pensions, and social and health insurance are associated with employment in the formal sector (Wahba & Assaad, 2017). Those employed outside of the formal sector are not entitled to the same benefits. They often lack social insurance and an official work contract, leaving them vulnerable in old age and more prone to financial uncertainty than those in formal employment (Barsoum, 2016). With the growth of the informal economy, permanent full-time work contracts are gradually being replaced by

non-standard forms of employment found mainly in micro and small-scale enterprises (Barsoum, 2015, 2016; Wahba & Assaad, 2017). For example, the share of first jobs without work contracts increased from 25% in 1975 to 70% by 2005 (Wahba, 2009).

Despite the continued rise in the supply of educated female graduates, their degrees provide limited value beyond obtaining employment in the public sector. The employment guarantee scheme was partially responsible for orienting the education system to reflect the needs of the public sector workplace. This results in most graduates finding themselves poorly equipped in terms of the technical skills and relevant experience demanded by the private sector. Over 70% of women in higher education are concentrated in the humanities and social sciences (Angel-Urdinola & Semnali, 2010). These degrees typically carry greater value in government jobs than in the type of work available in the private sector.

This issue is compounded by a slow-growing private sector. Poorly enforced labour laws, failure to comply with international standards, inadequate government support, and low labour productivity are among the main obstacles impeding private sector growth in the country (Assaad et al., 2020; Youssef et al., 2020). The share of private sector employment as a percentage of total employment increased from 8% in 1998 to a mere 12% in 2018 (Assaad et al., 2020). The largest spikes in private sector jobs occurred in male-dominated trades, such as the construction and transportation industries (Assaad et al., 2020).

The decline in public sector hiring and an ageing workforce is slowly pushing women out of the labour market. Recent data shows that the age of public sector workers is steadily increasing. In 2014, the proportion of public sector workers aged 45 and above was 53%, up from 40% in 2000 (Assaad & Barsoum, 2019). This has translated into fewer young women being able to find a government job. Only 30% of women aged 18–29 years were able to secure work in the public sector in 2018 compared to 53% back in 1998 (Barsoum & Abdalla, 2020). Given that the public sector continues to offer better pay, generous pensions, and favourable work-family arrangements, this trend has not redirected the surplus of educated female graduates towards private sector employment. Rather, most women will either queue for public sector jobs or withdraw from the labour market altogether (Angel-Urdinola & Semnali, 2010; World Bank, 2012).

Against the backdrop of fewer jobs and declining employment stability in the Egyptian labour market, can maternal employment during daughters' adolescence enable women's labour force attachment, and allow them to achieve more secure and stable employment?

2.5 Gender (in)equality at the work-family interface

For decades, work-family scholars have explored the complex linkages between working in the labour market and family life at home. This research finds that attempting to combine both work and family life can be a source of conflict or enrichment. Some argue that work and family life are incompatible (Kelly et al., 2014) and posit that participating in one domain, limits the time and energy that one contributes to the other domain (Kelly et al., 2014; Moen & Yu, 2000). Others have suggested that a work-family balance is achievable and can be rewarding: the more work and family roles one occupies, the more resources one can accumulate (Greenhaus & Powell, 2006).

The relationship between work and family is assumed to be bidirectional: family shapes work life and work shapes family life. In countries like Germany and the United States, married men enjoy a wage premium compared to their unmarried counterparts (Ludwig & Brüderl, 2018; Pollmann-Schult, 2011). By contrast, for married women, finding time to care for children and the elderly, as well as maintaining a full-time job, can be difficult (Kelly et al., 2014; Moen & Yu, 2000). This is made more challenging by men's low contributions to housework, where they are regularly absolved from most child-rearing responsibilities. In the United States, for example, most women either withdraw from the labour force or scale back from full-time work after childbirth (Lu, Wang, & Han, 2017). At the same time, motherhood, but not fatherhood, can have negative consequences for women's employment prospects. Referred to in the literature as the "motherhood penalty" or "the motherhood wage gap", research from the United Kingdom and Germany shows that mothers typically earn less than non-mothers (Harkness & Waldfogel, 2003). They are often seen as being less committed to the labour market and more family-oriented than their childless counterparts. Similar observations have been made in Egypt. Marriage has been shown to negatively impact women's ability to participate in private sector, but not in public sector, work (Assaad, Krafft & Selwaness, 2017).

The reverse relationship in which work influences family life has also been well-documented. For example, public sector employment in Egypt is positively associated with marriage formation: employed men and women transition into marriage faster than their unemployed counterparts (Krafft & Assaad, 2020; Salem, 2016). In the United States and elsewhere, women's employment and earnings can lead to a more egalitarian division of labour at home, with men taking on a larger share of housework (Carlson & Lynch, 2017; Cunningham, 2007, Hu, 2019). Moreover, the cost of having children on the employment opportunities for women can have an impact on birth timing and the number of births (Becker, 1985).

Thus, the relationship between work and family is reciprocal. Women's work in the labour market can interfere with family life, and women's family life can interfere with work in the labour market. The degree to which either domain conflicts with the other is likely to depend on context. Specifically, work-life balance policies such as generous maternity leaves or flexible work arrangements, and gender norms regarding work and family roles, will in part determine whether women can reconcile family commitments with work.

Methodological limitations still pose challenges to disentangling the bidirectional relationship between work and family life. Seeking to understand the ways in which work events impact and are impacted by family events, new analytic techniques have recently been developed and applied to determine the direction of causation. In this thesis, I attempt to overcome some of these challenges using a novel estimation method: in Chapter 4 I use an instrumental variable approach to address the potential endogeneity of women's employment and their risk of physical and psychological IPV.

2.6 Domains of gender inequality in (re)production

It is well recognised that a multidimensional approach to understanding women's status relative to that of men is key to illustrating the endurance and breadth of gender inequality. As a result, the ways in which we measure gender inequality has been a central topic of interest for researchers and policy makers. Several indicators of gender inequality along various dimensions of wellbeing have been established and refined by scholars with the aim of advancing policy and documenting the narrowing or widening of gender gaps (Permanyer & Boertien, 2019; Salem, 2018; Salem, Cheong, & Yount, 2018; Yount, Zureick-Brown, & Salem, 2014). Most of the findings from research on gender inequality in Egypt has been

mixed, with some reporting a decline in gender inequality in some areas (Elbadawy, 2015), while others report it to be increasing or stagnating in other areas (Assaad et al., 2020).

This thesis distinguishes between different dimensions of gender inequality to explore the ways in which these inequalities are formed at the work family-interface, how they are enforced in marriage, and whether they can be reduced through women's fulfilment of sociocultural reproductive expectations. The three dimensions are: employment stability, IPV against women, and household decision making. Each will now be considered in turn.

2.6.1 Employment stability

Women's employment stability has been acknowledged in the literature as a key dimension of gender equality. Employment stability matters for reducing gender pay inequality between men and women (Biltagy, 2014; Hakim, 1996). It leads to more stable income and gives women the ability to live with greater independence (Winkler, 2016). Women in stable employment express more support for non-traditional gender roles than women in less stable employment or who are unemployed (Cassidy & Warren, 1996). Increasing women's employment stability is also linked to other domains of female empowerment. For example, having more stable employment can improve women's bargaining power in the home and facilitate their exit from gender unequal or unhappy marriages (Kulik, 2014).

Previous studies have highlighted the role of women's employment stability in shaping female agency and determining their family's well-being. Among low-income women, employment stability can reduce their risk of IPV as well as the adverse effects of IPV on mental health (Adams et al., 2013; Crowne et al., 2011). Research on child development finds that women's employment stability is positively associated with child cognitive and behavioural outcomes (Pilkauskas, Brooks-Gunn, & Waldfogel, 2018).

A history of unstable employment significantly reduces expected lifetime earnings and negatively impacts women's chances of re-employment (Fuller & Qian, 2021; Sikora, 2018). Others have shown that low employment stability can constrain women's choices in the family. For example, in Germany, less stable employment can hinder the transition to motherhood (Schmitt, 2012).

Research on the ways in which parents influence their children with regards to labour force participation is lacking, and the mechanisms driving these effects, if there are any, are still not fully understood. Employment instability in the form of temporary contracts and informal work is becoming a central feature of the Egyptian labour market (Wahba & Assaad, 2017). Although previous studies on the intergenerational transmission of women's employment have provided some insight on how mother's employment can influence their daughters' employment, data limitations have precluded the analysis of women's employment stability.

The first empirical chapter fills this gap and provides an analysis of the relationship between mothers' employment and women's employment stability, and how this relationship differs with mothers' and women's own employment sectors.

2.6.2 Intimate partner violence

Gender inequalities in marriage may increase or reduce the threat of multiple forms of IPV against women. Men often exercise great power over women and may resort to violence to maintain this gender hierarchy (Chung et al., 2008; Weitzman, 2014). For example, patriarchal beliefs that grant men control over women's lives can put women at a greater risk of experiencing IPV (Villarreal, 2007). These inequalities can also constrain women's access to and control over important resources, such as education and employment, which limits their ability to exit abusive marriages or to reach out for help (Vyas & Watts, 2009).

Research indicates that IPV becomes a reality for many Egyptian women shortly after marriage. Approximately one in five women report first encountering some form of IPV within the first five years of marriage (El-Zanaty et al., 2015). The most common forms of IPV include physical and psychological, with sexual IPV being the least frequently reported (Yaya et al., 2019, El-Zanaty et al., 2015). The proportion of women experiencing IPV is highest for the least educated, the unemployed, the poor, and those located in rural Upper Egypt (Yaya et al., 2019; Yount & Li, 2010; El-Zanaty et al., 2015).

Unlike less gender-unequal societies where IPV is committed almost equally by men and women, in more gender-unequal societies IPV is more frequently perpetrated by men against women (Vyas & Jansen, 2018). In patriarchal, male-dominated societies, such as Egypt, an

abundance of practices and beliefs continue to afford men the right to exercise IPV in marriage. In Egypt, less than 1% of ever-married women initiate IPV against their spouse (Yount & Li, 2010; El-Zanaty et al., 2015). Of the women who report exposure to IPV in marriage, 64% name the spouse as the main perpetrator (El-Zanaty et al., 2015).

Women's roles in Egyptian society may be undergoing significant change because of recent political movements such as the Arab Spring. Male unemployment rates and job instability have risen (El-Mallakh et al., 2018; Roushdy & Selwaness, 2014). The prices of important commodities, too, have increased and threatened the livelihoods of many families, especially those in the lowest wealth quintiles (Abdou & Zaazou, 2013; El-Mallakh et al., 2018). These changes led to a temporary rise in female employment. First, they amplified the necessity for two-earner families, resulting in more women taking up low-quality jobs mostly in the informal sector. A recent study shows that men's weekly working hours and monthly wages deteriorated significantly in the aftermath of the Arab Spring, whereas women's informal sector employment increased to compensate for the loss of male earnings (El-Mallakh et al., 2018). Second, as in many of the Arab regimes, the Egyptian government was quick to respond to protest demands by increasing public sector hiring. The data shows that the size of the public sector increased from 6.1 to 6.3 million employees between 2011 and 2012 (Assaad & Barsoum, 2019). This was accompanied by an increase in government pay, which was up by 15% towards the end of 2011 (Bescehl & Yousef, 2016).

The existing literature has explored the effect of these changes on women's roles in the family, and their implications for gender inequality in various domains (Bargain, Boutin, & Champeaux, 2019; El-Mallakh et al., 2018), but none have considered them in relation to IPV against women in marriage in Egypt. The second empirical chapter contributes to the literature by exploring how the Arab Spring might have reconfigured gender relations, and in turn, women's risk of physical and psychological IPV.

2.6.3 Household decision making

Women's participation in household decision-making is considered a good indicator of intra-household gender inequality. Most important family decisions such as those relating to children, household expenses, and marriage take place within the home. These decisions can

shape how important resources are distributed among family members, who gets access to healthcare and other basic needs, as well as women's status in the family (Ghose et al., 2017; Zhang et al., 2020).

The gendered division of household labour reinforces women's weak bargaining position at home. Unlike men, women spend a disproportionate amount of time cleaning, cooking, and looking after children, spouses, and the elderly (England & Kilbourne, 1990). Constraining women to housework limits their labour force participation and income-generating opportunities (Bian & Wang, 2019). The persistent gender pay gap and workplace discrimination towards women in general means that even when women are employed, they earn less, work in low-quality and unstable jobs, and can be perceived as being less capable or productive than men (Biltagy, 2014; Palomino & Peyrache, 2010). Men face significantly fewer obstacles to their economic empowerment and therefore have traditionally held greater bargaining power at home relative to their female counterparts.

Several studies demonstrate that women's decision-making power is critical, not only for their own well-being but also for the well-being and development of their children. Women's decision-making power has the potential to improve women's health by, for example, increasing their likelihood of receiving antenatal care (Rizkianti et al., 2020; Zhang et al., 2020), using family planning services (Belay et al., 2016), and implementing safer sex practices in marriage (Sano et al., 2018). Their empowerment can benefit their children in terms of improving dietary intake (Saaka, 2020) and child survival (Acharya et al., 2010). It can also determine the degree to which women can bargain for resources in favour of female children. For example, women's decision-making power has been found to increase the likelihood of their daughters' primary school enrolment (Luz & Agadjanian, 2015).

Most research assessing women's participation in household decision-making processes in Egypt has focused primarily on various economic and non-economic sources of bargaining power. This leaves women's fertility, a bargaining resource specific to patrilineal cultures, relatively unexplored. One exception is a recent longitudinal study examining the effects of women's fertility on their intrahousehold bargaining power, which found that women with at least one birth make more household decisions, regardless of the gender of the child (Samari, 2017a).

The third empirical chapter therefore builds on the literature by exploring women's household decision-making as a proxy for female empowerment, and theorising women's intrahousehold bargaining power as being shaped by a combination of resources—non-economic (education), economic (employment), and cultural (patrilineal fertility). Importantly, I distinguish between the independent and the combined effects of these resources on women's household decision-making.

The three dimensions under consideration were selected and arranged in a temporal order that follows women's expected life course trajectory in Egypt. I begin with women's early adolescent experiences before moving onto the two most common markers of adulthood: marriage and childbearing. Throughout the thesis, I ask what resources can women draw on during different life stages and events? And what are the cultural constraints that women face therein?

3 How Does Maternal Employment Shape Women's Employment Stability in Egypt? Mediation by Women's Education and Moderation by Employment Sector

3.1 Introduction

Stable employment promotes women's long-term economic empowerment. Job stability has been associated with a range of advantageous social, economic, and well-being outcomes, notably income security, improved mental health, and better career development and progression (Assaad, 2014; Kim & Wickrama, 2021; Winkler, 2016). Women's employment stability can lead to greater workforce productivity and reduced hiring costs (Weisshaar, 2018). More broadly, transitioning in and out of employment can reduce women's but not men's likelihood of re-employment, which reinforces the traditional breadwinner-homemaker family model and represents an important mechanism for the (re)production of gender inequality (Fuller & Qian, 2021).

Scholars have long established a link between parents and their daughter's employment, arguing that daughters of employed mothers are more likely to be employed than daughters of unemployed mothers (McGinn, Ruiz Castro, & Lingo, 2019; Sieverding, 2015; Van Putten, Dykstra, & Schippers, 2008). Evidence for the intergenerational association between parents' employment and daughters' employment stability is, by comparison, limited. Recognising women's dual commitments to work and family, which can result in frequent career interruptions and unstable employment, I extend previous research by examining how mothers' employment relates to their daughters' employment stability in Egypt. Investigating the determinants of women's employment stability is important because women are at a greater

risk than men of being in unstable employment throughout their working lives (Bian & Wang, 2019).

The social mobility literature underscores the importance of education as a key mechanism through which maternal employment can shape women's employment stability (Blau & Duncan, 1967). Daughters of working mothers may be more likely to attain higher levels of education (Dunifon, Hansen, Nicholson, & Nielson, 2013; Goldberg, Prause, Lucas-Thompson, & Himsel, 2008) because of potentially fewer financial constraints and greater access to parental resources (Afridi, Mukhopadhyay, & Sahoo, 2016; Bloome, Dyer, & Zhou, 2018) and better-educated women tend to have more stable employment (Barsoum, 2014; Cairo & Cajner, 2018). Numerous studies show that Egyptian women have increased their educational attainment considerably and continue to outperform men in recent years (Salehi-Isfahani, Hassine, & Assaad, 2014). However, high educational attainment has not automatically translated into increased female labour force participation (Assaad, 2014). The importance of women's education can increase in the context of declining job stability, as women need to regularly learn new skills and update existing ones (Kalleberg, 2009). Indeed, women's education has become increasingly predictive of women's labour force attachment in Egypt and elsewhere (Cairo & Cajner, 2018; Cheng & Loichinger, 2017; Barsoum, Ramadan, & Mostafa, 2014; Loichinger, 2015). Against the backdrop of women's rising educational attainment, the present study explores the role of women's education as a major pathway through which maternal employment affects women's employment stability.

This study also leverages the Egyptian labour market's unique institutional characteristics to identify sectoral differences in the relationship between mothers' employment and daughters' employment stability. Public and private sector employment in Egypt differs in several respects, including employment formalisation, job desirability, workplace feminisation, and educational requirements (Assaad & Barsoum, 2019; Barsoum, 2010, 2020; Constant, Edochie, Glick, Martini, & Garber, 2020). Disaggregating the analysis by employment sector has the potential to reveal how the relationship between mothers' employment and daughters' employment stability may be conditioned by the institutional differences between the public and private sector labour markets.

The aim of this study is to move beyond the conventional focus on women's employment status and extend previous work on the intergenerational association between mothers' and daughters' employment in a number of ways. First, the empirical analysis draws on a nationally representative longitudinal data collected from 3,345 women, each observed three times (in 2006, 2012, and 2018), which enables the assessment of their employment stability over time. Second, a decomposition method is used to delineate the extent to which women's education mediates the impact of maternal employment on their daughters' employment stability. Third, the analysis also sheds new light on how the relationship between mothers' employment and daughters' employment stability differs between public and private sectors. These insights are crucial considering recent public sector downsizing in Egypt, which has meant fewer stable employment prospects in that sector.

The results of this study show that mothers' and daughters' employment outcomes are strongly positively correlated, with maternal employment having a long-lasting, direct impact on women's employment stability. The results point to public sector—but not private sector—intergenerational continuity in employment outcomes. Education mediates a portion of the relationship between maternal employment and women's employment stability, with significant differences by employment sector.

3.2 Theoretical considerations

3.2.1 Women's employment stability

A key contribution of this study is its conceptualisation and operationalisation of women's employment outcomes. Previous studies on the intergenerational transmission of employment have focused primarily on women's employment at a single point in time (Sieverding, 2015; Van Putten et al., 2008) rather than on women's ability to sustain their employment over extended periods. When compared to men, women's employment stability is more often negatively affected by the unequal distribution of household tasks and care responsibilities (Carlson & Lynch, 2017; Cunningham, 2008).

Research has established that women's employment is more easily interrupted than that of men by life-course events, such as marriage and childbirth (Assaad, Krafft, & Selawness, 2017; Bian & Wang, 2019), caring for ageing family members (Mavriplis et al., 2010), or spousal

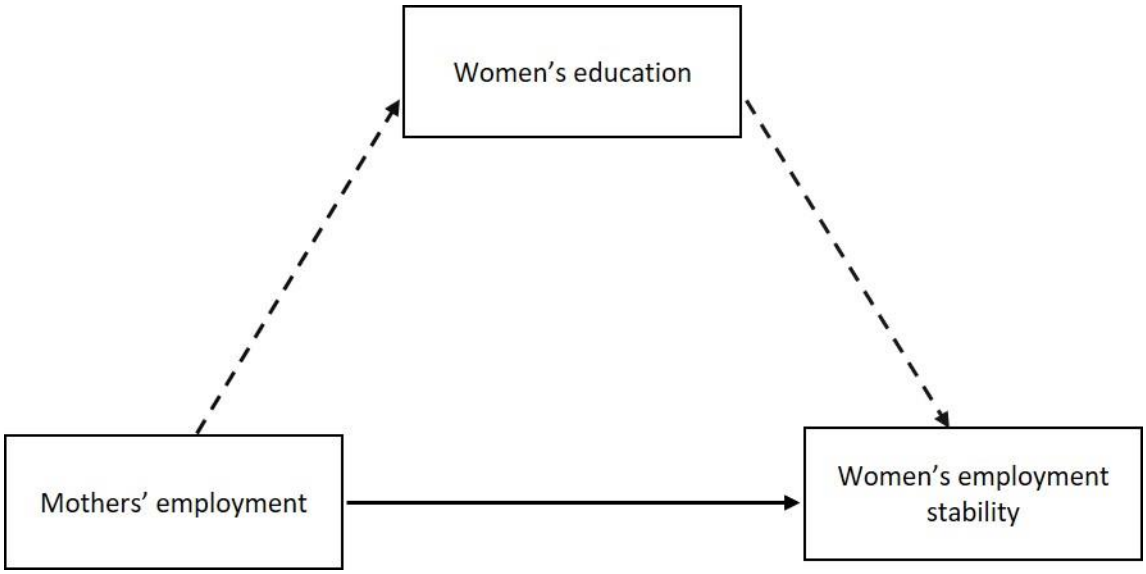
career changes (Bian & Wang, 2019). At the same time, men's involvement in domestic chores is minimal in Egypt and can increase women's work-family conflict (Nazier & Ezzat, 2021). This means that, while the Egyptian family is set up in such a way that supports men's stable employment, women's employment stability over the course of their lives is more dynamic and is typically hampered by frequent employment interruptions.

While the strength of the correlation between mothers' and daughters' employment participation – often measured using a binary measure – has been a key empirical focus in existing research, the stability of women's employment should also be viewed as essential for several reasons. Strong labour force attachment is important, not only to prevent human capital depreciation (Evertsson, Grunow, & Aisenbrey, 2016) but also for career progression, as promotions are typically awarded based on seniority (Assaad, 2014; Winkler, 2016). Spending time outside of the labour market can lead to skill obsolescence due to workplace technological changes and innovations (Evertsson et al., 2016). Consequently, stable employment can contribute to up-to-date skill development and maintenance (Evertsson et al., 2016; Winkler, 2016). Women's employment stability has also been shown to lead to higher wages (Gardiner, Robinson, & Fakhfakh, 2016; Winkler, 2016). Research suggests that Egypt's persistent gender wage gap partly emanates from gender differences in labour force attachment (Biltagy, 2014). Aside from monetary rewards, the incidence of poor mental health is lower among women in full-time or stable, long-term employment than among those with lower employment stability (Kim & Wickrama, 2021; Zabkiewicz, 2010).

Therefore, an investigation of the influence of maternal employment on women's employment stability emerges as a clear research priority that will facilitate a better understanding of how maternal employment may contribute to women's long-term social, economic, and well-being empowerment.

3.2.2 Parental employment, daughters' education, and daughters' employment stability

Figure 3.1 Mediation model of mother's employment, daughter's education, and daughter's employment stability



Note. Dotted lines represent the indirect effects of mothers' employment on daughters' employment stability through daughters' education. Solid line represents the direct effect of mothers' employment on daughters' employment stability net of indirect effects.

Figure 3.1 presents the conceptual framework of the study, which includes three main components: mothers' employment, daughters' education, and daughters' employment stability. Based on this framework, mothers' employment exerts direct and indirect influences on their daughters' employment stability. Daughters' education is posited as a mediator between mothers' employment and daughters' employment stability. In the model, Path A represents parental investment in women's education, and Path B represents the labour market benefits of women's education, in addition to the direct effect of mothers' employment on daughters' employment stability (Path C).

3.2.2.1 Direct effects of parental employment

A considerable amount of research has provided evidence of the positive association between mother's and daughters' employment outcomes in a variety of contexts. One study conducted in Norway has highlighted the intergenerational link between parents' and children's unemployment (Ekhaugen, 2009). More recently, also from a sample of Norwegian women, research found that maternal employment was strongly correlated with their daughter's full-

time employment (Haaland, Rege, Telle, & Votruba, 2018). A similar study in the Netherlands showed that the mothers' employment reduced a daughters' likelihood of switching from part-time work to homemaking (Hendrickx, Bernasco, & De Graaf, 2001). In the United Kingdom, there is research to suggest that parental joblessness increases their children's rates of employment exit and re-entry (Macmillan, 2014). In other studies, daughters of employed mothers exhibited greater confidence in their ability to succeed in the labour market and to balance their family and work roles, than those whose mothers were unemployed (Zhou, 2020).

Two conceptual frameworks have been influential in explaining the direct effects of mothers' employment on daughters' employment outcomes. On the one hand, resource theory posits that a daughters' employment stability depends positively on access to parental resources, which can help to develop a daughter's long-term career plans and, therefore, her employment stability (Hérault & Kalb, 2016; Hendrickx et al., 2001). Parental resources have been broadly defined in the intergenerational literature to include human capital, economic resources, and social capital. For instance, children with access to parental income and professional networks are advantaged across a large spectrum of labour market outcomes, such as having a lower probability of being economically inactive in adulthood (Ermisch & Francesconi, 2000) and higher occupational status (Erola & Jalovaara, 2017). Similarly, children of more highly educated parents tend to develop professional interests and to hold higher status jobs (Dubow, Boxer, & Huesmann, 2009).

On the other hand, role modelling theory supports the idea that women's employment stability is more strongly influenced by gender-specific role models. Daughters learn more from observing and imitating their mothers than from their fathers. For example, behaviour modelling has been observed in searching for similar employment opportunities or pursuing comparable occupations (McGinn et al., 2019; Sieverding, 2015). Conversely, exposure to unemployed mothers may reinforce the idea that women's employment conflicts with gender expectations or is nonessential, and as a result, a daughter might choose to opt out of employment in adulthood or remain weakly attached to the labour market (Sorhagen, Keiffer, & Weinraub, 2019; Sieverding, 2015). Research grounded in the role modelling perspective finds that mothers' employment is generally more predictive of daughters' employment outcomes than their fathers' employment (Sieverding, 2015).

Mothers' employment is particularly important during adolescence, the formative years of their daughters' lives (Baum, 2003, 2004; Goldberg et al., 2008). The literature argues that the sphere of parental influence during adolescence is attenuated by children's increasing involvement in school life and interactions with their peers (Baum, 2004; Lam, McHale, & Crouter, 2014). Thus, maternal employment during this period of the child's life can encourage individual autonomy and provide opportunities for role exploration (Baum, 2004). Where the gender of the child is considered, previous findings suggest that girls are more likely than boys to become independent when subject to reduced maternal supervision (Goldberg et al., 2008; Lam et al., 2014). It is plausible, therefore, that maternal employment during daughters' adolescence would have a positive effect on women's employment stability.

To sum up, while it is difficult to distinguish the effects of parental resources and role models, maternal employment may increase the probability that daughters are in more stable employment through various mechanisms: the availability of parental resources, same-sex role model effects, and the timing of maternal employment. Following these theoretical considerations, two hypotheses were formulated:

> **Hypothesis 1A:** Mothers' employment during their daughters' adolescence has a positive association with their daughters' employment stability.
>
> **Hypothesis 1B:** Mothers' employment is more strongly associated with their daughters' employment stability than their fathers' employment.

3.2.2.2 Indirect effects of parental employment

The indirect effects of maternal employment, on the other hand, operate through its effects on daughters' educational attainment. A mother's employment increases household income (Afridi et al., 2016), which in turn can enable mothers to invest more in their daughters' educational development, such as paying for school fees, private tuition, or by purchasing books and other educational resources. Prior research, generally in a cross-national context but also specifically in Egypt, has shown that increased maternal income leads to better educational outcomes of their children (Afridi et al., 2016; Bloome et al., 2018; von der Lippe, 1999). Additionally, the literature finds that maternal employment can impact children's academic success, such as grade progression, performance on formal examinations, and cognitive abilities (Dunifon et al., 2013; Goldberg et al., 2008; Waldfogel, Han, & Brooks-Gunn, 2002).

In turn, women's enhanced education, because of their mothers' employment, can yield greater employment stability. First, human capital theory assumes that workers' productivity increases in proportion to their level of education (Becker, 1993). Education can increase women's market value and well-educated women can generally secure stable employment more readily than those with less education (Barsoum, Ramadan, & Mostafa, 2014; Cairo & Cajner, 2018; Swinnerton & Wial, 1995).

A second strand of literature emphasises education's role in shaping women's attitudes and values. These studies posit that education can provide exposure to gender-egalitarian beliefs which help to promote female employment (Davis & Greenstein, 2009; Inglehart, Norris, & Ronald, 2003). As a result, educated women are more likely to seek out meaningful work and less likely to adhere to patriarchal norms than their less-educated counterparts.

If mothers' employment potentially enables greater investment in women's education, which later can become an important determinant of women's employment stability, it follows that women's educational attainment might mediate the association between maternal employment and women's employment stability. Therefore, I hypothesise the following:

> **Hypothesis 2:** Women's education mediates the relationship between maternal employment and their employment stability.

3.2.3 Public and private sector employment differences

A key aim of this study is to explore whether, and to what extent, the relationship between maternal employment and women's' employment stability differs according to employment sector. The Egyptian labour market is made up of two distinct employment sectors: the public and private sectors. The public sector is coveted as it offers better provision of social services, shorter working hours, legal employment contracts, and greater job stability (Assaad & Barsoum, 2019; Barsoum, 2004, 2010, 2020; Constant et al., 2020).

In comparison, the private sector is characterised by a high degree of informality, greater risk of exposure to sexual harassment, and fewer socially desirable jobs (Barsoum, 2020; Wahba & Assaad, 2017). These inter-sectoral differences have produced a pattern whereby women's

employment has traditionally been skewed towards the public sector (Barsoum & Abdalla, 2020). The persistence of public sector employment among women raises questions about whether mothers and daughters' employment sector outcomes are linked, and what this might mean for social mobility.

A mother's employment sector can determine their daughters' employment stability in the same sector via two mechanisms: access to sector-specific resources and role modelling. First, maternal public and private sector work experience may enable the transmission of sector-relevant human capital, including information on organisational culture, job application strategies, and successful interview techniques (Laband & Lentz, 1983; Pasquier-Doumer, 2013; Laferrere, 2001). The mothers' employment sector might give daughters access to different social networks (Ponzo & Scoppa, 2011; Scoppa, 2009). This might allow them to sidestep public sector job queues, or facilitate their entry into the private sector where professional connections can be more important than education (Assaad, Krafft, & Salehi-Isfahani, 2018).

Second, sector-specific role models matter for normalising daughters' public or private sector employment. A mother's employment sector may provide ideological encouragement for daughters to enter a similar employment sector, which may or may not be viewed by daughters of unemployed mothers to be socially appealing or congruent with gender stereotypes (Fairlie & Robb, 2006). Both mechanisms, therefore, suggest a positive association between mothers' employment sector and daughters' sector-specific employment stability, as specified in Hypothesis 3A:

> **Hypothesis 3A:** Mothers' employment is strongly associated with their daughters' employment stability in that same sector, but not a different sector.

Existing literature on the evolution of public and private sector employment in Egypt has also focused on the role of education. Researchers have reported that the relationship between women's education and their employment outcomes may be conditioned by employment sector (Assaad et al., 2018; Assaad, 2014; Barsoum, 2016; Salehi-Isfahani, 2012). Based on the public sector employment guarantees enacted between 1961 and 1991 for all secondary and university graduates, investments in education have been made with the aim of gaining access to public sector jobs (Assaad & Barsoum, 2019; Salehi-Isfahani, 2012). Assurances of employment were

part of a nationalisation campaign which led to a significant government expansion of higher education and positioned the state as the main employer of educated labour (Assaad, 2014; Salehi-Isfahani, 2012).

The promise of public sector jobs therefore increased the demand for formal qualifications, but not the skills and competencies needed for private sector employment (El-Hamidi, 2010). In other words, passing exams was viewed as more important than developing the professional or technical skills that would ease the transition from education into stable private sector employment (Salehi-Isfahani, 2012). Consequently, the practical and symbolic importance of education as a gateway to stable employment in public sector labour markets is not shared by its private sector counterparts. Thus, we might expect women's educational attainment to play a more important role in mediating the relationship between maternal employment and women's employment stability in the public than in the private sector, as hypothesised below:

> **Hypothesis 3B:** Women's education will play a stronger role in mediating the relationship between mothers' public sector employment and daughter's public sector employment stability than in the relationship between mothers' private sector employment and daughter's private sector employment stability.

3.3 Method

3.3.1 Data and sample

The analysis is based on the 2006, 2012, and 2018 waves of the Egypt Labour Market Panel Survey (ELMPS). Launched in 1998, the ELMPS is a publicly available longitudinal household survey conducted by the Economic Research Forum with Egypt's Central Agency for Public Mobilisation and Statistics (Krafft, Assaad, & Rahman, 2019). Households were selected using a multistage stratified probability sample design. The ELMPS tracks and interviews households included in previous waves as well as individuals who may have split from their original households (Assaad & Krafft, 2013; Krafft et al., 2019). In every wave, a refresher sample based on census records is included so that the survey remains representative of the Egyptian population (Krafft et al., 2019).

The ELMPS is well suited to this study because it (1) collects information on women's educational backgrounds, employment, employment sectors, and various other demographic characteristics; (2) collects data on parents' education and employment pertaining to when the respondent was aged 15; and (3) allows us to track women's employment stability across multiple survey waves. Panel sampling weights were used to adjust for sampling design and attrition (Krafft et al., 2019).

To account for the possibility that motherhood is likely to disrupt women's employment, the analytical sample was first restricted to women aged 18–49 years, as these were the only group of women to provide information on the number and gender composition of their children. This also coincides with the minimum age of 18 for employment in the public sector (Barsoum, 2020). We then excluded all women who were still in the educational system at the time of the first interview. This left 3,494 women, who were each observed three times, in 2006, 2012, and 2018 (hereafter referred to as T_1, T_2, and T_3, respectively). We then removed 149 women with missing data on key predictors and covariates. The final sample consisted of 3,345 women, who were observed in all three waves.

3.3.2 Dependent variable: women's employment stability

The key dependent variable measures women's employment stability. The women interviewed for the ELMPS were asked whether they had participated in any employment during the week before the survey. Participation in employment was defined as being a wage worker, an employer, or self-employed (Assaad & Krafft, 2016). I created an ordinal variable using the following coding: (0) unemployed at all three survey interviews (61%); (1) employed at only one of the three survey interviews (21%); (2) employed at two of the three survey interviews (9%); (3) employed at all three interviews (7%). Within the "unemployed" category, I include those who were fully unemployed and those who were unemployed but actively seeking employment. This measurement serves as a proxy for women's long-term employment stability, rather than a cross-sectional shot or short-term changes in women's employment participation.

3.3.3 Key predictors

Descriptive statistics for all variables used in the analyses are reported in Table 3.1.

Mothers' employment status and sector. The key predictor was the respondents' mothers' employment status and sector when the respondents were aged 15 years. The variable was measured by the women's responses to the following questions: "What was your mother's main employment status when you were 15 years of age?" and "In what sector did your mother work?" I created a first dummy variable that assigned the value 0 to unemployed mothers (84%) and 1 to employed mothers (16%). I created a second categorical variable that assigned the value 0 to unemployed mothers (84%), 1 to mothers employed in the public sector (5%), and 2 to mothers employed in the private sector (11%). Women's reports of their mother's employment status and sector are largely consistent across all three waves (< 2%); therefore, I used the responses from T_1.

Fathers' employment status. This variable was measured by the women's responses to the following question: "What was your father's main employment status when you were 15 years of age?" The variable was coded as 0 if the father was unemployed (2%) and as 1 if the father was employed (98%). Earlier analyses tested a more detailed categorisation of fathers' employment status and sector, distinguishing between unemployed, employed in the private sector, and employed in the public sector. As the results indicated no significant differences in terms of the fathers' employment sector, I opted for a binary variable for parsimony. Women's reports of their father's employment status are also largely consistent across all three waves (< 1%); therefore, I used the responses from T_1.

Mothers' and fathers' education. The respondents' mothers' and fathers' levels of education were measured according to the highest level they attained. The responses from T_1 were used and recoded into three categories: (1) illiterate (79% and 52% for mothers and fathers, respectively), (2) less than vocational secondary education (9% and 35%, respectively), and (3) vocational secondary or above (11% and 12%, respectively). Parents who had completed vocational secondary or higher education were coded as one group because only approximately 1% of mothers and 4% of fathers had completed university education or higher.

Mediator: women's education. Educational attainment was operationalised as the respondents' self-reports of their highest level of education. The response options included: "illiterate", "reads and writes", "primary", "preparatory", "general secondary", "vocational

secondary", "post-secondary institute" and "university or above". Women's educational attainment was coded as an ordered categorical variable with three categories to ensure large enough cell sizes for the subgroup analyses: less than vocational secondary education (85%), vocational secondary education (4%), and university and postgraduate education (11%). As those women who were still in education at the time of the first interview were removed from the sample, women's level of education was consistent across all three waves; therefore, I used the responses from T_1.

3.3.4 Covariates

I also controlled for a wide range of sociodemographic characteristics that might affect women's employment stability and its relation to maternal employment (Hu & Shi, 2020; McGinn et al., 2019; Sieverding, 2015; Van Putten et al., 2008). For all covariates, unless indicated otherwise, I included both the measures from the baseline year (T_1) and any changes. I traced changes that occurred between T_1 and T_3, for anything that fluctuated between T_1 and T_2 and T_2 and T_3, I categorised them based on an overall comparison between T_1 and T_3. For instance, if a woman reports 2 children in T_1, 3 children in T_2, and 1 child in T_3, then they are recorded as having had a decrease in the number of children between T_1 and T_3.

Table 3.1 Descriptive statistics for the full sample of 3,345 women each observed three times

	Min	Max	Mean/%	SD
Key variables				
Women's employment at T_1 – T_3				
Consistently unemployed	0	1	61.6	
One-period employed	0	1	21.9	
Two-period employed	0	1	9.0	
Three-period employed	0	1	7.7	
Education at T_1				
< Vocational secondary			84.5	
Vocational secondary	0	1	4.0	
University and postgraduate	0	1	11.7	
Parents' characteristics				
Mother				
Employment status at T_1 (ref = unemployed)	0	1	16.0	
Employment sector at T_1				
Unemployed	0	1	84.1	
Employed (public sector)	0	1	5.0	
Employed (private sector)	0	1	11.3	
Father				
Employed at T_1 (ref = unemployed)	0	1	98.0	
Covariates				
Mother's education at T_1				
Illiterate	0	1	79.1	
< Vocational secondary	0	1	8.9	

> Vocational secondary	0	1	11.8	
Father's education at T_1				
Illiterate	0	1	52.3	
< Vocational secondary	0	1	35.3	
> Vocational secondary	0	1	12.3	
Birth year	1968	1988	1978	5.4
Sibship size at T_1	1	10	4.7	2.0
Sibship size at T_1 – T_3				
No change	0	1	53.2	
Decreased	0	1	23.6	
Increased	0	1	23.2	
Number of children at T_1	0	7	1.7	1.5
Age of children at T_1				
No children	0	1	28.1	
0-2	0	1	33.2	
3-5	0	1	25.6	
6-9	0	1	9.3	
10 +	0	1	3.7	
Number of children between T_1 – T_3				
No change	0	1	31.6	
Increased	0	1	64.7	
Decreased	0	1	3.7	
Marital status at T_1				
Single	0	1	18.0	
Married	0	1	79.7	
Divorced or widowed	0	1	2.2	
Marital status between T_1 – T_3				
No change	0	1	79.2	
Married	0	1	12.5	
Divorced or widowed	0	1	8.2	
Urban at T_1 (ref: rural)	0	1	39.0	

Note. Min = minimum value, Max = maximum value; M = mean, SD = standard deviation; < = less than, > = greater than; T_1 = 2006, T_2 = 2012, T_3 = 2018. For dummy variables, 0 = No and 1 = Yes. Mean values reported for continuous variables and percentages for dummy and categorical variables. Percentages may not add up to 1 due to rounding. Reference groups are shown in parentheses. Weighted statistics and unweighted sample size.

Sibship size. Sibship size has been shown to influence intrafamily resource allocation (Hu & Shi, 2020; Trinitapoli, Yeatman, & Fledderjohann, 2014). Therefore, I included a continuous measure of the total number of siblings based on responses from T_1. The variable ranges from 1 to 10 siblings. Earlier analyses controlled sibships' gender compositions, but these were not statistically significant at the 10% level in any of the models.

Change in sibship size. I used a categorical variable to indicate whether any change had occurred in the women's sibship sizes. The variable is grouped into three categories: no change in sibship size between T_1 and T_3 (53%), a decrease in sibship size between T_1 and T_3 (23%), and an increase in sibship size between T_1 and T_3 (23%). Approximately 3% of the women in the sample experienced fluctuation in sibship size between T_1 and T_2 and between T_2 and T_3.

Number of children. All ever-married women aged 18–49 were asked to report their total number of children. I included a continuous measure of the total number of children based on responses from T_1. Given that premarital sex is strictly forbidden in Egypt (Inhorn, 2018), never-married women who did not report any children were recorded as childless. The variable ranges from 0–7 children.

Change in number of children. I used a categorical variable to indicate whether any change in the number of children had occurred. The variable is grouped into three categories: no change in the number of children between T_1 and T_3 (32%), a decrease in the number of children between T_1 and T_3 (3%), and an increase in the number of children between T_1 and T_3 (63%). Less than 2% of the women in the sample experienced fluctuation in the number of children between T_1 and T_2 and between T_2 and T_3.

Youngest child's age. The age of the youngest child was measured in years. Based on responses from T_1, the variable was coded into four categories: (1) no children (28%), (2) 0–2 years old (33%), (3) 3–5 years old (25%), (4) 6–10 years old (9%), and (5) 10 years old and older (4%).

Marital status. Based on responses from T_1, the women's marital status was grouped into three categories: single (18%), married (79%), and divorced or widowed (2%).

Change in marital status. I used a categorical variable to indicate whether any change in women's marital status occurred. The variable is grouped into three categories: no change in marital status between T_1 and T_3 (79%), married between T_1 and T_3 (12%), and divorced or widowed between T_1 and T_3 (8%).

Birth year. The women's birth year, ranging from 1968 to 1988, was included as a continuous measure.

Urban vs. rural residence. The use of formal employment contracts is more prevalent in urban than in rural areas (Barsoum, Ramadan, & Mostafa, 2014). Therefore, I used a binary variable to distinguish between urban (39%) and rural residents (61%). As less than 1% of women had changed location between T_1, T_2, and T_3, no change variable was included.

3.3.5 Analytic strategy

I employed generalised structural equation modelling (GSEM) to examine whether daughters' education mediates the relationship between mothers' employment and daughters' employment stability. GSEM allows one to (1) fit several models simultaneously; (2) evaluate ordered and unordered categorical response variables; and (3) measure direct, indirect, and total effects. The two-part GSEM predicted daughters' employment stability as a function of daughters' education and mothers' employment status when the daughter was aged 15 using an ordinal logit link function; daughters' education, in turn, was also predicted by mothers' employment using an ordinal logit link function.

Next, I divided my sample into two subsamples based on the mothers' employment sectors and another two subsamples based on daughters' employment sectors. The model setup remained unchanged. A Wald test was applied to compare the coefficients across each pair of subgroups. All models were estimated in Stata and included the full set of control variables. The variance inflation factor (VIF < 3) indicated no severe multicollinearity in the models (Li, 2013).

Finally, to assist interpretation of the results, I used the Karlson, Holm, and Breen (KHB) method to decompose the total effect of mothers' employment status and sector on daughter's employment stability into direct and indirect effects mediated by the daughters' education. The KHB method permits the assessment of multiple mediators (levels of education) in nonlinear regression models (Breen, Karlson, & Holm, 2013). A discussion of the advantages of the KHB method and the formulas for decomposing total, direct, and indirect effects can be found in Appendix A.

3.4 Results

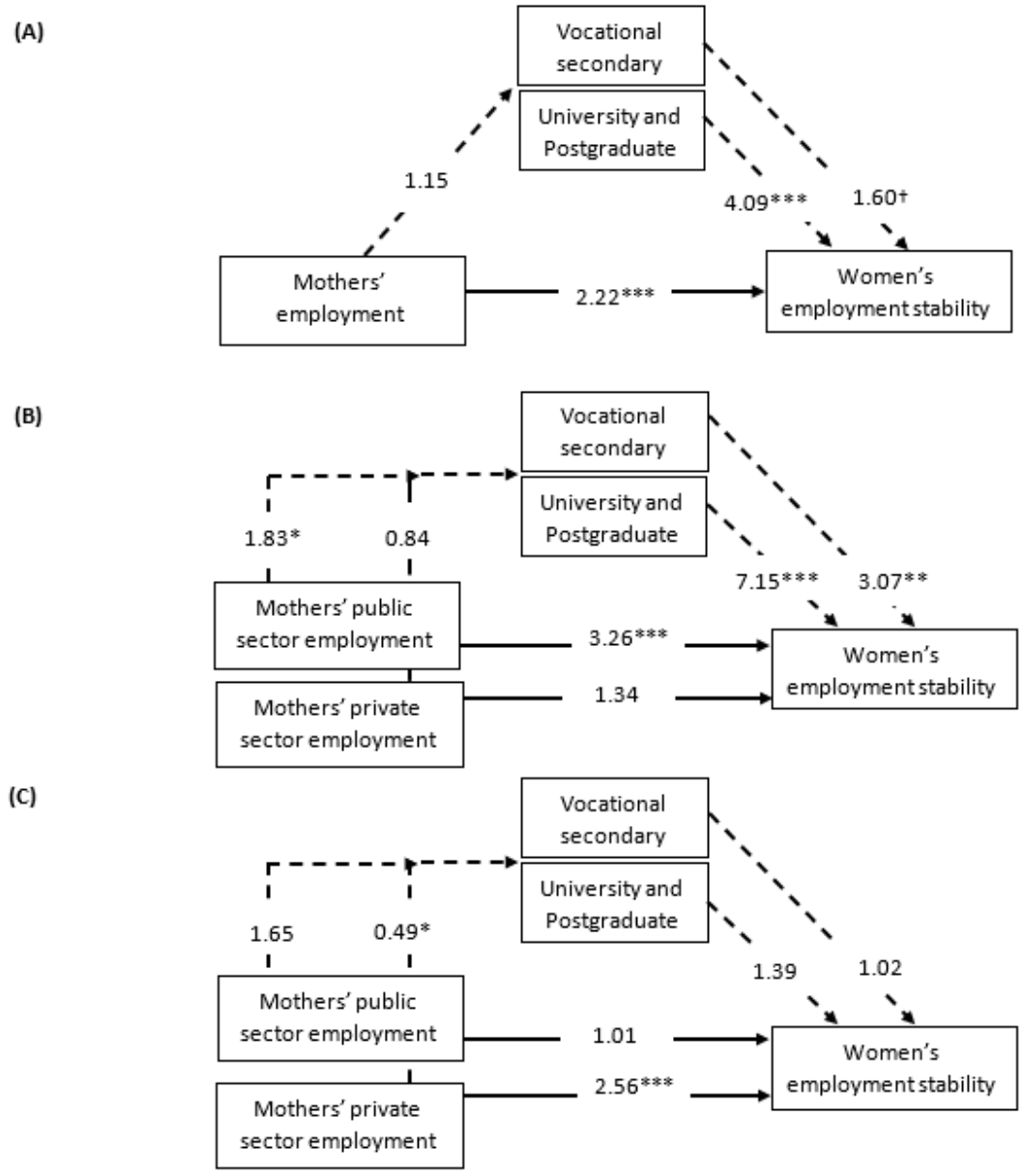
Panel A of Figure 3.2 illustrates the pathways between mothers' employment, women's education, and women's employment stability, together with the odds ratios (OR) and statistical significance levels associated with each pathway. The full sets of coefficients, including the main effects, are presented in Appendix A Table A.1.

Direct effects of maternal employment. Hypothesis 1A, which predicted that maternal employment during their daughters' adolescence would be positively associated with their daughters' employment stability, was supported. Daughters with employed mothers were more likely to have greater employment stability (OR = 2.22, $p < .001$) than daughters whose mothers were unemployed. The results from Panel A of Figure 3.2 also support Hypothesis 1B: that mothers' employment would be more strongly associated with their daughters' employment stability than fathers' employment. The fathers' employment was not significantly associated with women's employment stability at the 10 per cent level (see Table A.1 in Appendix A). The absence of a significant effect from fathers' employment might be attributed to the lack of variation in paternal employment status, with most daughters (98%) indicating that their fathers were employed during their adolescence.

These findings lend support to role modelling and resource theories, suggesting that mothers' employment status directly impacts daughters' employment stability, either through a process whereby women imitate the employment behaviour of their same-sex parent, through resource transfer from mothers to daughters, or a combination of both.

Indirect effects of maternal employment. Next, I used the KHB procedure to test whether women's employment stability was mediated by the women's education. The results of these analyses are presented in Table 3.2. The findings lend some support to Hypothesis 2: that women's education would mediate the relationship between maternal employment and women's employment stability. Altogether, women's education explained only 4% of the association between mothers' employment and women's employment stability. With less than vocational secondary education as the reference group, most of the indirect effect of mothers' employment on women's employment stability is attributable to women's university and post-graduate education.

Figure 3.2 Structural equation model of women's employment stability in the (A) public and private sector (*N* = 3,345), (B) public sector only (*N* = 2,483), (C) and private sector only (*N* = 3,010).



Note. Models included all covariates shown in Table A.1. Each woman is observed three times. Sensitivity analyses can be found in Appendix A, Tables A.2 (excluding women whose marital status, number of children, and number of siblings fluctuated between T_1 and T_3), A.3 (excluding sector switchers), A.4 (extended definition of employment), and A.5 (different combinations of two-period employed). **p* < .05 ***p* < .01 ****p* < .001 †*p* < .10 (two-tailed).

Public and private sector differences. Panels B and C of Figure 3.2 illustrate the pathways between mothers' employment, women's education, and women's employment stability by the public and private sectors, respectively. A Wald chi-square test was performed to determine whether the difference between the coefficients in the models predicting women's public and private sector employment stability was statistically significant. The full set of coefficients is reported in Table A.1 in Appendix A.

Hypothesis 3A was only partially supported: that mothers' employment sector would be strongly associated with their daughters' employment stability in the same sector, but not in a different sector. Panel B of Figure 3.2 illustrates that mothers' public sector employment greatly increased their daughters' employment stability in the public sector (OR = 3.26, $p <$ .001). Women with mothers working in the public sector were nearly four times more likely to experience greater employment stability in the public sector than women with unemployed mothers. The Wald chi-square test indicated that there was a significant difference at the 1% level of statistical significance in the effects of maternal public sector employment on women's employment stability in the public and in the private sectors. By contrast, the coefficients of maternal private sector employment were not statistically different for women's public vs. private sector employment stability. These findings suggest that maternal public sector employment is significantly associated with women's employment stability in the public sector, whereas maternal private sector employment is not significantly related to women's employment stability in the private sector. In other words, intergenerational employment sector continuity between mothers and daughters is evident mainly for public sector employment.

Hypothesis 3B, which predicted that women's education would play a stronger mediating role in women's employment stability in the public than in the private sector, was supported. The results of the KHB decomposition by women's public and private sector employment are presented in the last two columns of Table 3.2. I found that the effects of maternal public sector employment on women's employment stability in the public sector were partially mediated by the women's education. Specifically, women's education was a statistically significant mediator ($p <$ .01) and explained 24% of the effect of maternal public sector employment on women's public sector employment stability. In comparison, there was no statistically significant ($p <$ .10) mediating effect of women's education in the association between maternal private sector employment and women's private sector employment stability.

Table 3.2 Total, direct, and indirect effects of mother's employment on women's employment outcomes using KHB mediation analysis and decomposition.

	Women's Employment Stability					
	Either sector (*N* = 3,345)		Public sector only (*N* = 2,483)		Private sector only (*N* = 3,010)	
	Estimates (SE)	% of IE in TE	Estimates (SE)	% of IE in TE	Estimates (SE)	% of IE in TE
Mother Employed (either sector)						
Total effect *(c)*	0.93*** (0.09)	NA				
Direct effect *(c')*	0.89*** (0.09)	NA				
Indirect effect *(ab)*	0.04† (0.02)	4.72%				
via						
Vocational secondary	–0.01 (0.01)	–1.75%				
University and postgraduate	0.06 (0.02)	6.47%				
Mother Employed (public sector)						
Total effect *(c)*			1.25*** (0.24)	NA	0.59* (0.30)	NA
Direct effect *(c')*			0.94*** (0.25)	NA	0.52† (0.30)	NA
Indirect effect *(ab)*			0.31*** (0.09)	24.81%	0.06* (0.03)	11.69%
via						
Vocational secondary			–0.07 (0.03)	–5.72%	0.00 (0.01)	0.47%
University and postgraduate			0.38 (0.08)	30.54%	0.06 (0.02)	11.23%
Mother Employed (private sector)						
Total effect *(c)*			0.42† (0.23)	NA	1.03*** (0.10)	NA
Direct effect *(c')*			0.41† (0.22)	NA	1.04*** (0.10)	NA
Indirect effect *(ab)*			0.01 (0.09)	1.50%	–0.00 (0.02)	–0.10%
via						
Vocational secondary			–0.02 (0.02)	–6.57%	0.00 (0.00)	0.07%
University and postgraduate			0.03 (0.05)	8.07%	–0.00 (0.01)	–0.18%
N observations (women)	3,345		2,483		3,010	

Note: KHB with ordinal specification. Models include all covariates shown in Table B1. Less than vocational secondary is the reference group. Each woman observed three times. The KHB approach allows us to decompose change in the coefficient into the percentage resulting from including education as mediator and the percentage explained by rescaling. Weighted analyses. *$p < .05$. **$p < .01$. ***$p < .001$ † $p < .10$ (two-tailed).

3.5 Sensitivity analyses

I performed several sensitivity analyses to ensure the robustness of my findings. First, the same models were run excluding the small percentage of women (≈ 3%) who experienced fluctuations in sibship size, number of children, and marital status between T_1, T_2, and T_3. The results remained unchanged across all models.

Second, a group of sector switchers represented a small number of women (< 100 cases) who had experienced two and three employment spells. These women differed in some observable characteristics from those who remained in the public or private sector only. Sector switchers were generally better-educated, and most were married and were more likely to have reported having an unemployed mother. These cases were retained and grouped with those who had experienced three employment spells in the subgroup analyses. A robustness check that omitted these women from the study, and later included them with women who experienced two employment spells, did not alter the main findings.

Third, previous research suggests that standard measurements of labour force participation often underestimate women's employment (Langsten & Salem, 2008). Therefore, I repeated the analysis using the extended definition of employment, which includes subsistence workers (Assaad & Krafft, 2016)—defined as those who produce goods or services for household consumption.

Fourth, I re-ran my analysis taking turns excluding women who were employed in (1) T_1 and T_2 or T_2 and T_3, (2) T_1 and T_3 or T_2 and T_3, and (3) T_1 and T_3 or T_1 and T_2. The results were consistent with those presented here (See Table A.2, A.3, A.4, and A.5 in Appendix A).

3.6 Discussion

Studies have demonstrated that the daughters of working mothers are more likely than those of non-working mothers to be employed (Hérault & Kalb, 2016; McGinn et al., 2019; Sorhagen et al., 2019; Sieverding, 2015; Van Putten et al., 2008). In many cases, however, employment is measured at a single point in time, which fails to account for variations in women's employment status. This study went beyond the commonly invoked dichotomy of employed

versus unemployed and focused instead on women's employment stability using three-waves of the ELMPS. I also explored sectoral differences in how maternal employment relates to daughters' employment stability and tested whether women's education mediated this relationship.

3.6.1 How does maternal employment shape daughters' employment stability?

Focusing first on the relationship between mothers' employment and daughter's employment stability, a statistically significant association was observed. The findings indicated that employment stability of the women in my sample was higher when they had a mother who was employed during their adolescence, when compared to those whose mothers were unemployed. Not surprisingly, the findings of this study, along with those previously reported in Egypt (Sieverding, 2015), underscore the importance of parental gender in intergenerational outcomes. Mothers' employment was found to be a stronger predictor of women's employment stability than their fathers' employment. These findings were robust to controls for several factors previously shown to impact women's employment stability, such as marriage and children, sibship size and composition, and other demographic characteristics.

This research breaks new ground by studying and measuring the impact of mothers' employment on their daughters' employment stability. The results imply that the positive effects of maternal employment on women's employment stability may have more to do with same-sex role models than with resource transfers between parents and daughters, insofar as daughters are likely to imitate their mothers and internalise similar gender roles. Examining the effect of specific types of maternal resource investments on women's employment stability was, however, beyond the scope of this study. Alternatively, parental investments in children could also be gendered, such that mothers invest more in the labour market success of their daughters and fathers pass on more of their resources to sons (England, 2003; Winkler, 2016).

Furthermore, the findings suggest that previous research, confined to point-in-time measures of women's employment status, provided only an incomplete picture of the role maternal employment plays in women's long-term economic empowerment. Maternal employment during adolescence can have a long-lasting impact on their daughters' later labour force

attachment; with mothers capable of impacting, from an early age, their daughter's ability to remain in stable employment. The above therefore calls for policies encouraging parental employment, and especially the employment of mothers of adolescent children in high school. The results obtained from this study provide evidence to the contrary of previous literature that views maternal employment as detrimental to children's socioeconomic outcomes and the overall wellbeing of the family (Han & Waldfogel, 2007; Ruhm, 2008). Daughters can benefit from their mother's employment in terms of their long-term employment stability. However, it is also possible that the timing of maternal employment, whether it occurs during the earlier years of children's lives or during adolescence, exerts different effects on later outcomes for the child. The focus of this study was on maternal employment during the daughters' adolescence as the formative phase in which work values and gender roles are beginning to mature. Future research on the effects of mothers' employment on women's employment stability should disaggregate these effects by the timing of maternal employment.

More generally, the findings of the study confirm that the effect of maternal employment on women's employment stability is partially mediated by women's education. Women who reported having an employed mother were better-educated than women who reported a mother who did not work, and better-educated women were more likely to be in stable employment. However, the results of the KHB decomposition suggest that women's education only explains 5% of the total effect that maternal employment has on women's employment stability. The role of women's education in the relationship between maternal employment and women's employment stability thus appears to be marginal, although there are considerable sectoral differences as I will discuss below.

3.6.2 Institutional differences in intergenerational outcomes: public versus private sector employment stability

This study presented a unique opportunity to explore whether and how the relationship between mothers' employment and daughters' employment stability differs between public and private sector labour markets. The results indicate that maternal public sector employment provides daughters with a sizable advantage in finding and remaining in employment in that same sector. Maternal private sector employment, in contrast, was not significantly associated with daughters' private sector employment stability. Thus, I found support for sector-specific resource and role modelling effects on women's employment stability in the public but not in the private sector. These differences might in part explain why most women in Egypt are

concentrated in public sector employment, despite the fact that both public and private sector employment are, in principle, accessible to all women.

I examined the mediating role of women's education in the association between maternal employment and daughters' employment stability by employment sector. The findings provide some new insights into these mechanisms. In the public sector, the mediating role of education was substantial. Women's education explained nearly one-quarter of the association between maternal public sector employment and women's public sector employment stability. In the private sector, women's education was not found to be a significant mediator. Women's education therefore appears to be more responsive to the demands of public sector employment than those of private sector employment. This finding is consistent with many studies that report varying degrees of articulation between the Egyptian educational system and sector-specific labour market needs (Assaad et al., 2018; Assaad, 2014; Salehi-Isfahani, 2012). Therefore, maternal investments in daughters' education may be one way to improve their employment stability in the public sector, but not necessarily in the private sector.

Despite the immediate success of the employment guarantee scheme in achieving and maintaining higher levels of female employment in Egypt, the results suggest that these policies could have had adverse effects on the intergenerational relationship between mothers' employment and daughter's employment stability. First, efforts to promote public sector employment have helped accelerate the expansion of the public sector, without commensurate growth in the private sector. Compared to mothers employed in the private sector, mothers employed in the large public sector might have had more opportunities to develop professionally and to gain transferable skills that could then be passed on to daughters to promote their public sector employment stability.

Second, tailoring the education system for public sector employment appears to have created significant obstacles for obtaining stable private sector employment, even for the well-educated. The fact that women's education was not a significant pathway through which maternal private sector employment influenced their daughter's private sector employment stability indicates a significant human capital loss for Egyptian society. Thus, this study adds

evidence to the argument that employment guarantee schemes can have generation-long effects on mothers and their daughters.

3.6.3 Limitations and future research

This study has several limitations. First, the results rely on the employment patterns of women first interviewed in the 2006 survey wave, most of whom were born in the late 1970s and early 1980s. Therefore, the intergenerational associations found among this cohort of women might not apply to more recent cohorts, whose long-term employment and career paths are still in development. Second, the analyses were based on women's employment status during the week prior to each interview; therefore, short-term changes in women's employment status outside the ELMPS measurement intervals were not captured. Third, a possible relationship in which women's employment preferences determine their educational outcomes was not tested in this study. Women who hold future expectations of economic inactivity or are willing to accept less permanent or low-paying jobs, are less incentivised to succeed academically (Beaman, Duflo, Pande, & Topalova, 2012; Wiswall & Zafar, 2018).

Future research should extend the analysis to incorporate additional potential mediators of the association between maternal employment and daughters' employment outcomes, including risk attitudes toward job security and stable benefits (Buurman, Delfgaauw, & Van den Bossche, 2012), and public service motivation (Barsoum, 2020). Moreover, greater attention should be paid to women's employment intentions (Sieverding, 2015; Weer, Greenhaus, Colakogly, & Foley, 2006). I have examined women's employment behaviour rather than their intentions to remain in employment when unable to do so for reasons beyond their control, such as work scarcity, gender-discriminatory recruitment, growth in fixed-term and temporary contracts, or other labour market rigidities.

4 Gender, Resources, and Intimate Partner Violence Against Women in Egypt Before and After the Arab Spring

4.1 Introduction

Recent official statistics on intimate partner violence (IPV) in Egypt have highlighted a significant trend: women are at high risk of exposure to ongoing injurious and life-threatening violence (Duvvury, Marcos, Gadallah, Attia, Adly, Maged, & Haddad, 2015; El-Zanaty et al., 2015), which often takes place within marital relationships. Formally, IPV denotes aggression perpetrated within an intimate relationship that may cause physical, psychological, or sexual harm (World Health Organisation [WHO], 2012). While physical IPV is more frequently researched, evidence suggests that psychological IPV can be used to maintain power and control over women and may lead to or accompany physical abuse (Follingstad, 2011; Hoff, 2009). Psychological IPV has also been linked to adverse mental and physical health outcomes in women, including depression and suicidal ideation (Jina et al., 2012), and obesity (Yount & Li, 2011). Moreover, estimates of the economic costs of IPV to Egyptian society, including alternative housing, medical, and counselling costs, is $95 million US Dollars annually (Duvvury et al., 2015).

Women's exposure to various forms of male domination has long been normalised in the Arab world (Ammar, 2006; Yount & Li, 2009). Recently, growing political openness and the persistent efforts of female activists have made IPV against women more widely recognised as a serious violation of women's rights (Ammar, 2006). Most scholarship aimed at identifying the correlates of IPV has relied on two main theoretical frameworks. Resource theory (Blood & Wolfe, 1960) assumes that the spouse with fewer resources, often operationalised as

education and income, is more likely to experience IPV (Goode, 1971; Vyas & Watts, 2009). Gender performance theory (West & Zimmerman, 1987), which falls under the rubric of feminist epistemology, is cognisant of gender power dynamics and structural inequalities (Anderson, 1997; Dobash & Dobash, 1979). From this perspective, IPV is considered culturally embedded and encouraged to maintain the patriarchal status quo (Chung, Tucker, & Takeuchi, 2008; Weitzman, 2014).

Both perspectives have provided tools for understanding the complexities of IPV in Western societies (Anderson, 1997; Goode, 1971). Yet, despite the frequency and severity of IPV in the Arab world (Ammar, 2006; Duvvury et al., 2015), similar scholarship in religious and patriarchal societies remains relatively scarce. Questions about how resources, gender, and power might relate to IPV have not received equal attention. Female education and employment serve as determinants of IPV victimisation (Fageeh, 2014; Jewkes, 2002). In many Western societies, women's rising educational attainment and participation in paid employment has been well-documented (Blossfeld & Kiernan, 2019). Conversely, while many countries in the Arab world, including Egypt, have achieved gender parity in primary- and secondary-level education, women's employment rates are among the lowest in the world (Assaad & Krafft, 2015). Some studies suggest that cultural norms in the region perpetuate IPV against women and impede women's social and economic equality (Yount, 2005a; Yount & Li, 2010). Given, contrasting views between those who assert that traditional gender roles justify IPV against women and those who argue that women's resources offer protection, our understanding of the correlates of IPV in patriarchal contexts remains limited.

The aim of this study is twofold. First, I examine the role of women's education and employment in shaping the incidence of IPV against women in Egypt. Second, I explore these relationships in the context of the events that took place during the Arab Spring. It is not the objective of this study to disentangle whether any changes observed are attributed to social norms, which determine gender roles and the distribution of resources, or to women's newfound access to the public sphere throughout the Arab Spring. What I aim to do is test how women's resources shape their exposure to IPV before and after the Arab Spring. I also craft an instrumental variable (IV) two-stage least squares (2SLS) estimation method to explain and disentangle the potential reciprocal relationship between women's paid employment and IPV (Bhattacharya, 2015; Lenze & Klasen, 2017).

4.2 Theoretical considerations

4.2.1 Defining and measuring IPV

Despite the broad definition of IPV, its operationalisation has often been limited to physical IPV (DeKeseredy & Schwartz, 2011) due to hesitancies towards combining physically injurious behaviour with psychological abuse under the umbrella term "IPV" (DeKeseredy & Schwartz, 2011). Whereas physical IPV refers to the deliberate use of physical force (Hoff, 2009), psychological IPV refers to a wide range of emotionally abusive behaviour, which may involve threats, ridicule, isolation, or public humiliation (Follingstad, 2011). The focus of research on IPV has traditionally been on the former, which is easier to recognise and report (see Appendix B for information on the Egyptian Penal Code). Therefore, to determine how female education and employment relate to different forms of IPV, I distinguish between psychological and physical IPV and examine them side by side.

4.2.2 Resource perspectives and IPV against women

Several theoretical perspectives inform our understanding of IPV against women. Developed from earlier theories of marital power (Blood & Wolfe, 1960), resource theory argues that resource disparities in marital relations underlie IPV (Goode, 1971; Vyas & Watts, 2009). Women's resources, both economic and non-pecuniary, determine their bargaining power (Blood & Wolfe, 1960). This power not only signifies the ability to influence family relationships, such as participation in housework and household decision making (Bargain, Boutin, & Champeaux, 2019; Hu, 2019), but may also offer protection from abuse (Bowlus & Seitz, 2006). Thus, advocates of this perspective view spousal resources as the primary organising principle in marital relations, where the imbalance or balance of resources can motivate the use of IPV.

Marital power reflects and is determined by relational dependence (Goode, 1971; Kalmuss & Straus, 1982). The availability of resources is thought to increase women's autonomy and offer protection from IPV (Goode, 1971). Many have emphasised the role of women's education in challenging traditional gender norms (Flake, 2005; Jewkes, 2002), which are often entrenched in socio-cultural expectations of female domesticity. Women's education can improve their

access to support networks, making them less likely to rationalise their spouses' use of IPV (Jewkes, 2002; Yount & Li, 2009) and better equipped to exit abusive relationships (Vyas & Watts, 2009). Similarly, women's employment arguably strengthens their financial self-reliance, thereby reducing their risk of IPV (Vyas & Watts, 2009). In more gender-egalitarian societies, such as Canada and Peru, researchers have found that women's employment and education are significant deterrents of IPV (Bowlus & Seitz, 2006; Flake, 2005). Findings from societies dominated by patriarchal ideologies, such as India and Saudi Arabia, do not support this perspective but indicate that cultural expectations that emphasise women's dependence on their spouses likely curtail their autonomy (Fageeh, 2014; Paul, 2016).

Others suggest that power is relational and depends on spouses' relative resource contributions (Lundberg & Pollack, 1993; Macmillan & Gartner, 1999). In marriage, power is attained and maintained through a series of exchange processes (Becker, 1991). Women with relatively abundant resources vis-à-vis their spouse can participate in this process by sharing or withholding their resources (Lundberg & Pollack, 1993; Macmillan & Gartner, 1999). The threat of resource deprivation and its impact on men's bargaining power may deter the use of IPV (Lundberg & Pollack, 1993). Research testing the role of resource bargaining in women's exposure to IPV has predominantly focused on employment and education. In the United Kingdom, improvements in women's labour market participation relative to men's strengthened their bargaining position and were negatively associated with IPV (Anderberg, Rainer, Wadsworth, & Wilson, 2016). A United States study found that women who were less-educated than their spouses were at greater risk of IPV (Kalmuss & Straus, 1982). However, in the absence of gender-egalitarian norms, women's relative resources are not found to strengthen their bargaining position in India (Weitzman, 2014).

Research on psychological and physical IPV in Egypt assessing the roles of both women's absolute and relative resources is largely missing. This stems in part from a lack of nationally representative Egyptian data and the absence of questions on the nature and timing of non-physical forms of abuse in surveys (Ammar, 2006; Yount, 2005a). This has meant that a notable gap in understanding the applicability of resource theories to IPV beyond Western contexts remains.

4.2.3 Feminist perspectives and IPV against women

One distinction between resource and feminist perspectives lies in their conceptualisations of power. Resource theory emphasises that power is non-exclusive and varies by the amount of resources an individual possesses. The feminist perspective, however, posits that power is contextually embedded and often reserved for men (Dobash & Dobash, 1979). Patriarchal systems shape social expectations regarding gender roles and power. These roles reinforce men's superiority by facilitating their disproportionate access to social, economic, and political institutions (Anderson, 1997; Dobash & Dobash, 1979). Similar power inequalities permeate marital relations, increasing women's vulnerability to men's control (Yount & Li, 2010).

Gender performance theories posit that women's and men's actions are governed by the beliefs of different socio-cultural groups (West & Zimmerman, 1987). In societies where patriarchal ideologies hold sway, societal norms define men as primary income-earners and women as homemakers (Mensch et al., 2003). For instance, in most Arab societies, women's education and labour market participation is discouraged and, in many cases, household income is controlled by the male patriarch (Mensch et al., 2003). The financial organisation of patriarchal households (Hu, 2019) can still leave working women financially dependent on their spouses. When women's gender performance deviates from these norms, their spouses may perceive their masculinity and social status as undermined (West & Zimmerman, 1987).

This perspective illuminates empirical findings that women's employment and education can challenge dominant norms of male superiority that may legitimise the use of IPV (Chung et al., 2008; Flake, 2005; Weitzman, 2014). Research in India and Peru has shown that wives who are better-educated than their spouses are more likely to experience IPV (Flake, 2005; Weitzman, 2014), indicating that violation of traditional gender norms increases the risk of IPV against women. In direct contrast to the predictions of resource theory, among Asian-American couples, women whose income was at least equal to that of their partner were at greater risk of IPV (Chung et al., 2008). A study in Mexico found that women's paid employment increases the risk of IPV when their partner is unemployed and reduces the risk when their partner is employed (Villarreal, 2007).

Women's gender performance is not evaluated independently from that of their spouses. Rather, it is interpreted relationally and with reference to context. Gender performance theories suggest that women whose education and employment status conflict with societal norms are at greater risk of IPV (Chung et al., 2008; Flake, 2005; Weitzman, 2014), particularly in societies like Egypt, where rigid gender roles prevail (Yount & Li, 2010; Yount, 2005a). Conversely, spouses who encounter threats to their masculinity when outperformed by women may also use IPV to re-establish their power.

4.2.4 Social and economic changes in Egypt before and after the Arab Spring

Mass protests throughout the Arab world began in 2010 and have since become widely known as the Arab Spring. In 2011, these protests spread to Egypt and have resulted in significant social and economic changes. Traditionally, gender norms restrict women's roles to the private sphere of the family (Mensch et al., 2003). During the protests, however, women across the country were granted greater access to the public sphere and some even became politically active (Bargain et al., 2019). The adverse economic consequences of the Arab Spring, such as rising male unemployment and poverty rates (Assaad & Krafft, 2015; Abdou & Zaazou, 2013) and higher food and fuel prices (Abdou & Zaazou, 2013), have also increased women's involvement in public life. Specifically, changes to women's economic participation are observed as they take on roles that were previously reserved for men, such as paid employment, out of economic necessity (El-Mallakh et al., 2018). At the same time, IPV remains prevalent and has risen in recent years (Duvvury et al., 2015). The estimated prevalence of IPV among women in the Arab world ranges from 8% to 65% (Boy & Kulczycki, 2008). By comparison, the prevalence of physical and psychological violence in Egypt among ever-married women is reported to be 25% and 19%, respectively (El-Zanaty et al., 2015).

Women's educational attainment has improved considerably in recent years. Egypt has been moving towards gender parity in primary and secondary school enrolment (Elbadawy, 2015). Improvements have also been observed in women's education relative to their spouses. According to the Central Agency for Public Mobilisation and Statistics (2018), 9.8% of wives and 6.9% of spouses were illiterate in 2016, compared to 17.7% and 10.9% in 2007, respectively. However, despite increased female education, women still lag behind men in labour force participation. Women's employment rates ranged from 18% to 23% between 2002 and 2014 (World Bank, 2019), while men's employment rates over the same period ranged

between 68% and 75% (World Bank, 2019). The differences in men's and women's employment can be partly attributed to cultural expectations that inhibit women's economic participation.

The assumption that education reduces IPV in the West is predicated on the idea that education enables women to question and challenge discriminatory gender norms (Jewkes, 2002). This is underpinned by the development of women's aspirations that transcend their domestic roles (Jewkes, 2002). This premise, however, may not hold in Egypt as the value of women's education is based on its importance for family functionality. Rather than fulfilling women's intellectual endeavors and enhancing their labour market outcomes, education is widely deemed to facilitate women's domestic responsibilities by ensuring they raise well-educated children who will uphold patriarchal religious beliefs (Mensch et al., 2003). This means that women's education and its use in Egypt constitute a resource of cultural preservation rather than empowerment.

Women's gender roles in the Egyptian family are changing, repositioning them as income-earners due to deteriorating economic conditions. In 2012, 20% of men were irregular wage workers, up from 9% in 2006 (Assaad & Krafft, 2015). Men's deteriorated labour market outcomes have also been accompanied by a surge in the prices of consumer goods (Abdou & Zaazou, 2013), increasing the financial strain on Egyptian families. The decline of men's employment and economic security has entailed a relative increase in women's labour force participation rates, as reflected in the narrowing gender gap and an increase in women's weekly hours of paid work (El-Mallakh et al., 2018). As Egyptian women's participation in stereotypically masculine domains, such as paid employment, has been justified on the grounds of fulfilling the family's financial needs (El-Mallakh et al., 2018), the above trends suggest that in unfavourable economic conditions, women's employment may be considered more socially permissible since the Arab Spring.

Women and men may waive traditional gender expectations in favour of the family's economic subsistence. The potential conflict between the economic necessity of women's employment and traditional beliefs that define women as inferior to men raises questions about how new gender arrangements may impact IPV against women since the Arab Spring. Arguably, the

pressure of economic crises may necessitate women's paid employment to help support the family, which can lead to more gender-equitable norms and less IPV.

4.2.5 Hypotheses

The discussion above can be summarised with the following four hypotheses. Hypothesis 1 focuses on women's absolute resources and tests the assumptions of individual autonomy theory, Hypotheses 2 and 3 focus on women's relative resources and tests the assumptions of resource bargaining and gender performance theory, and Hypothesis 4 compares the effects of women's education and employment before and after the Arab Spring.

Hypothesis 1: Educated women are less likely to experience IPV than their less-educated counterparts (H1A); employed women are less likely to experience IPV than their unemployed counterparts (H1B).

Hypothesis 2: Women who are better-educated than their spouses are less likely to experience IPV than women who are less or similarly educated than their spouses (H2A); employed women are less likely to experience IPV when their male spouses are unemployed or in low-status occupations compared to other men (H2B).

Hypothesis 3: Women who are better-educated than their spouses are more likely to experience IPV than women who are less or similarly educated compared to their spouses (H3A); employed women are more likely to experience IPV when their male partners are unemployed or in low-status occupations compared to other men (H3B).

Hypothesis 4: The positive association between women who are better-educated than their spouses and IPV was stronger before compared to after the Arab Spring (H4A); the positive association between women's employment and IPV was stronger before compared to after the Arab Spring (H4B).

4.3 Method

4.3.1 Data and sample

The analysis is based on the Demographic and Health Survey (DHS), one of the most comprehensive repositories of data on IPV against women in Egypt, first conducted in 1988. The survey data were collected using multistage sampling. It has since been repeated in seven waves (standard DHS), providing the largest nationally representative sample of Egyptian women. All ever-married women aged 15–49 who were present in the household the night before the survey were eligible for the in-person interview (El-Zanaty et al., 2015). In the 2005 and 2014 waves, a special domestic violence (DV) module was administered to a sub-sample of women in one-third of the households and inquired about women's exposure to physical and psychological IPV. One eligible woman was randomly selected from each household to complete the DV interview (El-Zanaty et al., 2015).

The analytical sample was restricted to the 2005 and 2014 DHS waves when the DV module was available. This also provides a suitable timeframe that covers the periods prior to and after the 2011 Arab Spring. I then excluded all women who did not participate in the DV module (N = 28,930). Of the remaining 12,306 women, those who were widowed (N = 436), divorced (N = 256), or separated (N = 71) were excluded due to the unavailability of spousal information. The low divorce rate reflects the universality of marriage in Egypt, where the national divorce rate was approximately 2–3% in 2015 (Salem, 2015). A total of 224 women were omitted as a result of item nonresponse on the variables used in the analysis, such as spouse's occupation, consanguinity, religion, and marriage order. Little's test of missing completely at random (MCAR) confirmed the listwise deletion of missing cases was MCAR (Li, 2013). The final analytical sample included 11,319 currently married women aged 15–49 years with complete data on all variables. Sampling weights were used in all analyses to account for the sample design.

4.3.2 Estimation strategy

To test resource and gender performance theories, I used women's education and employment to predict IPV. However, the literature suggests a bidirectional relationship between

employment and IPV (Bhattacharya, 2015; Lenze & Klasen, 2017): women's employment may determine their risk of IPV and IPV may in turn impinge on women's decisions to enter or exit the labour market. From an exposure reduction standpoint, scholars argue that abused women might intentionally pursue employment to reduce the amount of time spent in the vicinity of their abuser (Bhattacharya, 2015). Others have suggested a relationship in the opposite direction, whereby IPV leads to employee absenteeism due to physical and mental health issues (Riger & Staggs, 2004). The potential bidirectionality and omitted variable bias means that an ordinary least squares (OLS) regression would provide inconsistent parameter estimates.

To account for the potential bidirectional relationship between women's employment and IPV, I use an instrumental variable (IV) estimator. One form of this estimator is 2SLS. In the first stage, I regressed the endogenous variable (i.e. women's employment) on the IVs and covariates. In the second stage, I regressed IPV on the predicted probability of women's employment obtained from the first-stage regression (See Table B.1 in Appendix B). All models were estimated using the *ivreg2* package in Stata, where the two equations are estimated jointly to obtain corrected standard errors (Baum, Schaffer, & Stillman, 2007). An instrument's validity depends on three fundamental assumptions (Kitagawa, 2015). First, it is correlated with the endogenous variable (i.e. employment). Second, it does not directly impact women's likelihood of experiencing IPV (i.e. it is not correlated with the error terms of the outcome variable). Third, its effect on IPV is unconfounded (i.e. it must be strongly associated with employment but not associated with our covariates). To test the relevance of the IVs, the Anderson canonical correlation likelihood ratio test was used. To determine whether the IVs were correlated with the error term, the Hansen-Sargan over-identification test was used. Finally, to evaluate the overall strength of the instruments, I used the Cragg-Donald test for weak instruments.

Separate models were fitted for women's exposure to psychological (Model 1) and physical violence (Model 2). I ran three models: (a) key predictors and covariates, (b) added an interaction between women's and spouses' employment, and (c) added interactions between survey year, women's employment and women's relative education. I also tested a three-way interaction between women's employment, spouses' employment, and survey year. The interaction was not statistically significant, it did not affect the results for the other variables, and its inclusion did not improve the model fit. Therefore, I excluded it from the analyses reported in this paper. To interpret the interaction effects, I calculated the predictive margins

of the interactions and used the *lincom* function to compare slopes. The variance inflation factor (VIF) test for multiple collinearities yielded VIF values below the threshold of 2.5 for all variables, except for the number of children.

4.3.3 Instrumental variable

To address the potential endogeneity of women's employment, I used two instrumental variables selected based on prior theories and empirical tests. The first instrument was a continuous measure for the number of usual residents who had slept in the house the previous night and were listed in the household schedule (See Appendix B). This measure was top-coded at the 99th percentile to reduce the influence of outliers. The number of household members should be strongly correlated with women's employment. If resident members are of state pension age and can contribute to household income needs, women may withdraw from the labour force (Maurer-Fazio et al., 2011). In Egypt, social norms oblige adult children to care for ageing family members so that the overwhelming burden of unpaid elderly care is typically handled by women, which may curtail their employment opportunities. It is also plausible that the number of household members has no direct effect on women's exposure to IPV. The patrilocal extended family has long been the ideal family structure in Egypt (Yount, 2005b), which is likely to limit married women's access to natal kin who can impact their risk of IPV. Marital relations also operate following the patrilineal tradition whereby men assume the role of household head and are entitled to power over their spouses through various means, including IPV (Ammar, 2006). This in turn may discourage family intervention in marital conflict.

The second instrument captures geographical differences in female employment rates, using a continuous measure capturing the governorate average of women's employment. Egypt's DHS (2005, 2014) is grouped into geographical units known as governorates, indicating the region in which the female respondent was interviewed (see Appendix B). The governorate average of women's employment should be related to the probability of women's own employment but should not be correlated with IPV, except through its effect on women's labour market participation.

4.3.4 Outcome variables

The 2005 and 2014 DHS contained a DV module that was adapted using a Revised Conflict Tactics Scale (CTS2; Straus et al., 1996), which contains a rich array of information on physical and psychological IPV. Women who reported having experienced either form of violence were asked about the frequency of violence over the 12 months prior to the survey. As interpretations of what constitutes violence may vary between women, the inclusion of additional items and the use of behaviour-specific questions in the CTS2 enhances content validity and better captures IPV against women (Straus et al., 1996).

To measure physical IPV, the women were asked whether their spouses had, in the preceding 12 months, (1) pushed, shaken, or thrown something at them, (2) slapped them, (3) punched or hit them with an object, (4) attempted to strangle or burn them, or (5) kicked or dragged them, respectively. To measure psychological IPV, the women were asked whether their spouses had, in the preceding 12 months, (1) humiliated them or (2) threatened them with harm. The responses were recorded on a three-point scale indicating the frequency of violence: "not at all" (0), "sometimes" (1), and "often" (2). Using principal component analysis and varimax rotation, the five physical IPV items (eigenvalue = 2.88, Cronbach's α = 0.80) and two psychological IPV items (eigenvalue = 1.49, Cronbach's α = 0.62) were loaded on two distinct components. The Bartlett method was then used to extract two composite scores, whereby higher scores indicated higher prevalence of psychological or physical IPV in the preceding 12 months.

4.3.5 Key predictors

Spouses' education. The women were asked about their own and their spouses' respective level of education. The response categories include "no education" (25%), "primary" (13%), "secondary" (51%), and "higher-level" (11%). Using spousal information provided by the female respondents, I constructed four variables to measure spouses' relative education. The first three are dummy variables, distinguishing couples in which "the wife is better-educated" (14%), "the spouse is better-educated" (26%), and in which "both spouses are educated to the same level" (60%), respectively. The fourth was constructed following Schwartz and Han (2014) and is a continuous variable measuring the absolute difference in the level of education between spouses. The variable ranges from 1–3 for spouses with different educational levels, whereas educationally homogamous couples were coded as 1.

Women's employment. I included a dummy variable distinguishing unemployed (84%) and employed (16%) women, which was based on whether the female respondent worked outside the home in the preceding 12 months and was paid in cash, cash and in-kind, or in-kind only payments.

Spouse's employment. I included a dummy variable that takes on the value of 0 if the spouse is a "white-collar worker" (30%) and 1 if the spouse is a" blue-collar worker or unemployed" (70%). I combined blue-collar and unemployed spouses into one category as distinguishing between them does not yield statistically significant results ($p > .10$).

4.3.6 Covariates

I also controlled for several characteristics that are likely to influence IPV against women in Egypt. Research has found that IPV is more common among women who have children (Yount, 2005a). Therefore, I included a dummy variable capturing whether the female respondent had at least one child (81%) or no children (19%). As consanguineous marriage may increase women's access to natal kin and mitigate the risk of IPV (Yount & Li, 2010), I distinguished between women married to non-relatives (63%), first or second paternal cousins (18%), first or second maternal cousins (9%), or other relatives (10%). To account for geographical differences, I included a categorical variable distinguishing women residing in urban governorates (16%), Lower Egypt (36%), Upper Egypt (43%), and Frontier governorates (5%).

Given that age differences between spouses can impact women's ability to behave independently and may increase their risk of IPV victimisation (Vyas & Jansen, 2018), I controlled for the respondents' ages and the age gaps between spouses. After subtracting the spouse's age from the respondent's age, the age gap variable was grouped into five categories: (1) wife older than spouse by five years or less [–5, –1] (3%), (2) no age gap between spouses [0] (4%), (3) wife younger than spouse by one to five years [1, 5] (34%), (4) wife younger than spouse by six to twelve years [6, 12] (48%), and (5) wife younger than spouse by thirteen to twenty-five years [13, 25] (11%). As higher-order marriages are more likely to be polygamous and polygamy is associated with a higher risk of IPV (Vyas & Jansen, 2018), I distinguished between women who married once (98%) and more than once (2%). I also controlled for

women's age at first marriage, rural/urban residence, religion (Muslim vs. Christian), whether they had experienced physical abuse by their mother or father since age 15, and a household wealth index divided into quintiles from the poorest to the richest. Descriptive statistics for all variables used in the analyses are presented in Table 4.1.

Table 4.1 Sample Characteristics Married Women Aged 15–49 years (*N* = 11,319).

	Min	Max	Mean/ %	SD
Key variables				
Intimate partner violence (IPV)				
Psychological	–0.31	9.0	0	1.2
Physical	–0.51	16.2	0	1.6
Women's relative education				
Husband better educated than wife (H > W)	0	1	26.3	
Husband and wife similarly educated (H = W)	0	1	59.2	
Wife better educated than husband (W > H)	0	1	14.5	
Women's absolute education				
No education	0	1	24.8	
Primary	0	1	13.4	
Secondary	0	1	50.5	
Higher education	0	1	11.1	
Educational gap between spouses	1	3	1.1	0.3
Women's employment (ref: unemployed)	0	1	15.8	
Spouse white-collar worker (ref: blue-collar or unemployed)	0	1	30.5	
2014 survey year (ref: 2005)	0	1	52.5	
Covariates				
Family of origin violence (ref: no violence)	0	1	19.1	
Husband/other males present during IPV questions (ref: not present)	0	1	3.2	
Age gap[a]				
[–5, –1]	0	1	2.8	
[0]	0	1	3.5	
[1, 5]	0	1	34.5	
[6, 12]	0	1	48.3	
[13, 25]	0	1	11.1	
Age	15	49	29.3	9.4
Married more than once (ref: married only once)	0	1	2.2	
Age at first marriage	12	32	19.1	3.9
Relational status of husband				
Non-relative	0	1	62.8	
First or second paternal cousin	0	1	17.7	
First or second maternal cousin	0	1	9.3	
Other relative by blood or marriage	0	1	10.1	
Christian (ref: Muslim)	0	1	3.9	
Urban (ref: rural)	0	1	39.6	
Governorate				
Urban governorates	0	1	15.9	
Lower Egypt	0	1	35.6	
Upper Egypt	0	1	43.3	
Frontier governorates	0	1	5.2	
Has at least one child (ref: no children)	0	1	81.0	
Wealth quintiles				
Poorest	0	1	18.6	
Poorer	0	1	20.5	
Middle	0	1	20.4	
Richer	0	1	20.5	

Richest	0	1	20.1	
Total number of household members[b]	2	14	5.1	2.3
Governorate[c] average of women's employment	0.0	0.4	0.1	0.0

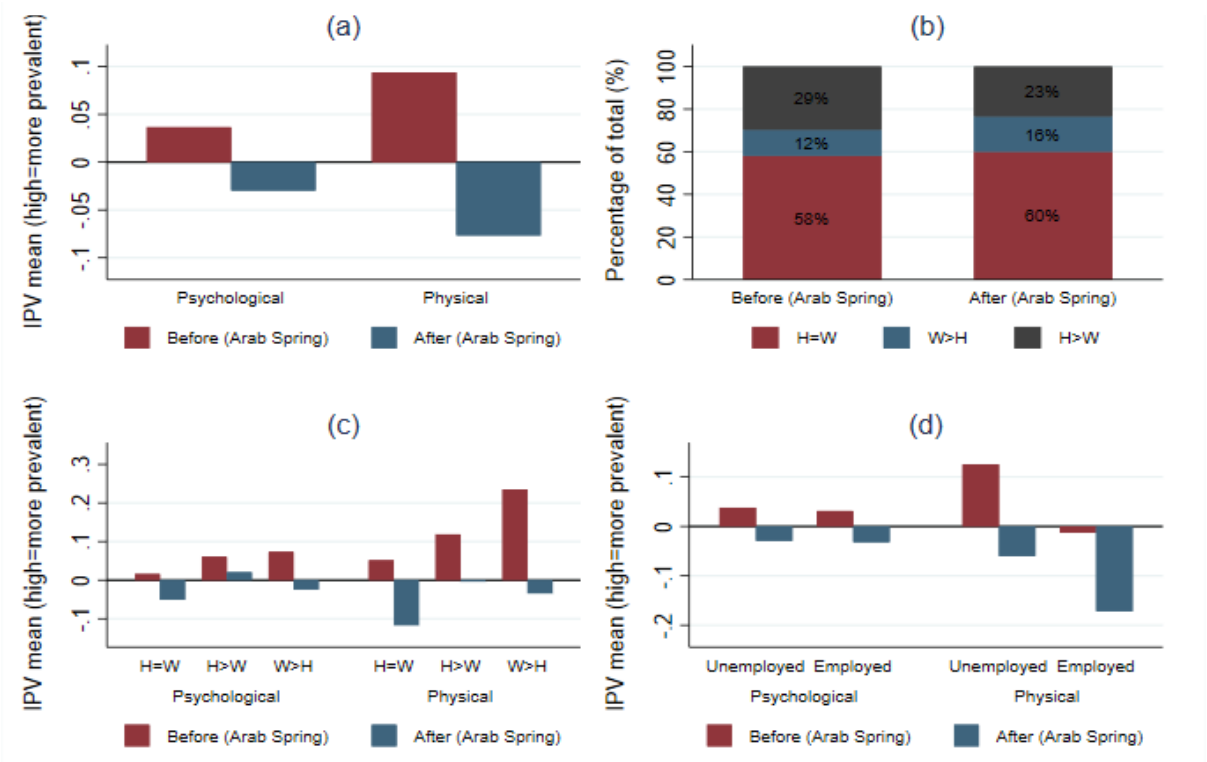
Note. Min = minimum value. Max = maximum value. SD = standard deviation. For dummy variables, 0 = No and 1 = Yes. Mean values reported for continuous variables and percentages for dummy and categorical variables. Percentages may not add up to 1 due to rounding. [a] Bottom- and [b] top-coded at the 1st and 99th percentiles. [c] Based on 27 governorates. Weighted statistics with unweighted sample size.

4.4 Results

4.4.1 Descriptive statistics

Panel A of Figure 4.1 presents the descriptive statistics for psychological and physical IPV before and after the Arab Spring. As higher scores indicate a higher level of IPV, the results show a decrease in the prevalence of psychological and physical IPV after the Arab Spring. This decline is more pronounced for physical than psychological IPV.

Figure 4.1 Descriptive statistics of women's employment, relative education, and IPV before and after the Arab Spring.



Note. *N* = 11,319 women. Unweighted statistics with unweighted sample size. Panel (a): psychological and physical IPV before and after the Arab Spring. Panel (b): women's relative education before and after the Arab Spring. Panel (c): physical and psychological IPV by women's relative education before and after the Arab Spring. Panel (d): physical and psychological IPV by women's employment before and after the Arab Spring. IPV = intimate partner violence. H = W = both spouses educated to the same level. W > H = wife is better educated. H > W = husband is better educated. Before the Arab Spring = 2005 wave. After the Arab Spring = 2014 wave.

Panel B of Figure 4.1 shows the distribution of spouses' education before and after the Arab Spring. More women were less-educated than their spouses before the Arab Spring than after (29% vs 23%), while the percentage of women who were better-educated than their spouses was higher after the Arab Spring period (12% vs 16%). These results concur with previous findings that gender disparities in university attendance have narrowed substantially in Egypt over the last decade (Elbadawy, 2015).

In Panel C of Figure 4.1, the results also show significant differences in the prevalence of physical and psychological IPV according to women's relative education vis-à-vis that of their spouses. Before the Arab Spring, the prevalence of physical and psychological IPV was higher among women who were better-educated than their spouses than women who were equally or less-educated than their spouses. After the Arab Spring, the prevalence of physical and psychological IPV was higher among women who were less-educated than their spouses than women who were equally or better-educated than their spouses. As Panel D of Figure 4.1 indicates, the prevalence of IPV also varies by women's employment status and over time. The prevalence of psychological and physical IPV for employed women has significantly decreased since the Arab Spring.

4.4.2 Two-stages least squares (2SLS) results

Table 4.2 presents the results of the 2SLS regression models predicting psychological IPV against women in the left panel and physical IPV in the right panel. Three tests were conducted to assess the strength and validity of the IVs used (Hu, 2019). Both instruments, the number of household members and the governorate average of women's employment, were strongly correlated with women's employment in the first-stage regression model ($p < .01$ and $p < .001$, respectively). To assess the instruments' relevance, the Anderson canonical correlation statistic for under-identification confirmed that the equation was identified ($\chi^2 = 460.94$, $p < .001$). The Sargan-Hansen statistic was small and statistically insignificant ($p > .10$), confirming that the IVs were uncorrelated with the error term. Finally, the results of the Cragg-Donald Wald F statistic ($F = 234.54$) exceeded the Stock-Yogo weak instruments test rule of thumb of 10 (Stock & Yogo, 2005).

Psychological IPV. Model 1A analyses the effects of women's absolute and relative education, along with the covariates. In line with individual autonomy theory, Hypothesis 1A proposed that educated women are less likely to experience IPV than their less-educated counterparts. This hypothesis was supported: compared to women with no education, women who received secondary education were significantly less likely to experience psychological IPV (β = –.14, p < .05). Women's higher education were also marginally negatively associated with psychological IPV (β = –.19, p < .10). These results suggest that women's education enhances their autonomy and reduces IPV. Women's relative education was not statistically significant lending no support to bargaining theory (Hypothesis 2A) or gender performance theory (Hypothesis 3A).

Hypothesis 1B, derived from individual autonomy theory, predicts that employed women are less likely than their unemployed counterparts to experience IPV. The results do not support this hypothesis. While the coefficient for women's employment is negative, it was not statistically significant at the 10% level in Model 1A. To test the moderating role of the spouse's employment on the relationship between women's employment and psychological IPV, I include an interaction term between women's and their spouses' employment in Model 1B. The interaction term was not statistically significant at the 10% level, meaning that neither bargaining theory (Hypothesis 2B) nor gender performance theory (Hypothesis 3B) is supported.

Physical IPV. Model 2A predicts women's exposure to physical IPV. As in the case of psychological IPV, the results support individual autonomy theory Hypothesis 1A: better-educated women are less likely than their less-educated counterparts to experience physical IPV. The results indicate that compared to women with no education, women who received secondary and higher education were significantly less likely to experience physical IPV (β = –.38, p < .001 and β = –.46, p < .001, respectively). The results do not support bargaining theory (Hypothesis 2A) or gender performance theory (Hypothesis 3A). Although the direction of the coefficients for women's relative education align with gender performance theory, they were not statistically significant at the 10% level.

Table 4.2 Two-stage least squares regression models predicting psychological (panel A) and physical (panel B) IPV in the previous 12 month (*N* = 11, 319)

	Psychological			Physical		
	Model 1A	**Model 1B**	**Model 1C**	**Model 2A**	**Model 2B**	**Model 2C**
	B (SE)	**B (SE)**	**B (SE)**	**B (SE)**	**B(SE)**	**B (SE)**
Women's employment (ref: unemployed)	–0.08			–0.80*		
	(0.27)			(0.34)		
Employed × Blue-collar and unemployed		–0.01			–0.93**	
		(0.31)			(0.32)	
Employed × White-collar		–0.25			–0.16	
		(0.41)			(0.67)	
Employed × 2005			–0.15			–0.99**
			(0.26)			(0.33)
Employed × 2014			–0.03			–0.25
			(0.72)			(0.76)
White-collar worker (ref: blue-collar & unemployed)	–0.05	–0.01	–0.05	–0.02	–0.14	–0.02
	(0.04)	(0.09)	(0.04)	(0.05)	(0.11)	(0.05)
Relative education (ref: H = W)						
W > H	0.05	0.04		0.09	0.12†	
	(0.05)	(0.05)		(0.06)	(0.07)	
H > W	–0.01	–0.01		–0.10	–0.11†	
	(0.05)	(0.05)		(0.07)	(0.06)	
H > W × 2005			–0.03			–0.20*
			(0.06)			(0.08)
H > W × 2014			0.02			–0.01
			(0.07)			(0.08)
W > H × 2005			0.11			0.21†
			(0.08)			(0.11)
W > H × 2014			0.01			0.03
			(0.07)			(0.06)
Educational distance	0.07	0.07	0.07	0.03	0.03	0.03
	(0.07)	(0.07)	(0.07)	(0.06)	(0.06)	(0.06)

Women's education (ref: none)						
Primary	0.04	0.04	0.03	–0.13	–0.13	–0.14
	(0.09)	(0.09)	(0.09)	(0.10)	(0.10)	(0.10)
Secondary	–0.14*	–0.13*	–0.14*	–0.38***	–0.41***	–0.39***
	(0.06)	(0.05)	(0.06)	(0.10)	(0.09)	(0.10)
Higher	–0.19†	–0.15	–0.19	–0.46***	–0.60***	–0.53**
	(0.11)	(0.10)	(0.15)	(0.13)	(0.18)	(0.16)
Physically hurt by father or mother (ref: no)	0.21***	0.21***	0.21***	0.57***	0.57***	0.58***
	(0.06)	(0.05)	(0.05)	(0.08)	(0.08)	(0.08)
Husband/other male present for IPV questions	0.02	0.02	0.02	0.03	0.02	0.03
	(0.08)	(0.08)	(0.08)	(0.12)	(0.13)	(0.13)
Wealth quintiles (ref: poorest)						
Poor	–0.04	–0.04	–0.04	–0.11	–0.12	–0.10
	(0.06)	(0.06)	(0.06)	(0.08)	(0.08)	(0.08)
Middle	–0.01	–0.00	–0.00	–0.12	–0.13	–0.10
	(0.07)	(0.07)	(0.07)	(0.08)	(0.08)	(0.08)
Rich	–0.10	–0.10	–0.10	–0.09	–0.10	–0.08
	(0.06)	(0.06)	(0.07)	(0.08)	(0.09)	(0.09)
Richest	–0.17*	–0.17*	–0.17*	–0.20*	–0.21*	–0.18†
	(0.07)	(0.07)	(0.07)	(0.09)	(0.09)	(0.10)
Married more than once (ref: married only once)	0.18†	0.18†	0.18†	0.51***	0.51***	0.52***
	(0.10)	(0.10)	(0.10)	(0.15)	(0.15)	(0.16)
Age at first marriage	–0.01	–0.01	–0.01	0.01	0.00	0.00
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Consanguinity (ref: husband non-relative)						
First or second paternal cousin	–0.08	–0.08	–0.08	–0.18**	–0.18**	–0.18**
	(0.05)	(0.05)	(0.05)	(0.05)	(0.06)	(0.06)
First or second maternal cousin	–0.05	–0.05	–0.04	–0.09	–0.09	–0.08
	(0.05)	(0.05)	(0.05)	(0.06)	(0.07)	(0.06)
Other relative by blood or marriage	–0.08†	–0.08†	–0.08†	0.00	–0.00	–0.01
	(0.04)	(0.04)	(0.05)	(0.08)	(0.08)	(0.07)
Age	–0.01†	–0.01†	–0.01	–0.01**	–0.01**	–0.01*
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Age gap (ref: –3, –1)						
0	–0.13	–0.13	–0.14	–0.02	-0.04	–0.05
	(0.10)	(0.10)	(0.11)	(0.14)	(0.14)	(0.14)

1, 5	–0.22*	–0.22*	–0.23*	–0.16	–0.18	–0.17
	(0.09)	(0.09)	(0.09)	(0.11)	(0.11)	(0.10)
6, 12	–0.27**	–0.27**	–0.28**	–0.26*	–0.28*	–0.27*
	(0.09)	(0.09)	(0.09)	(0.11)	(0.11)	(0.11)
13, 25	–0.18†	–0.18†	–0.19†	–0.27*	–0.29*	–0.28*
	(0.10)	(0.10)	(0.10)	(0.13)	(0.13)	(0.12)
Christian (ref: Muslim)	–0.02	–0.02	–0.02	–0.07	–0.08	–0.07
	(0.05)	(0.06)	(0.06)	(0.07)	(0.08)	(0.07)
Urban (ref: rural)	0.17**	0.17**	0.16**	0.13*	0.14*	0.13*
	(0.05)	(0.06)	(0.06)	(0.06)	(0.06)	(0.06)
Region (ref: urban governorates)						
Lower Egypt	0.00	0.01	0.01	–0.01	–0.03	–0.02
	(0.05)	(0.05)	(0.06)	(0.07)	(0.07)	(0.07)
Upper Egypt	–0.02	–0.01	–0.02	–0.03	–0.06	–0.04
	(0.05)	(0.05)	(0.06)	(0.06)	(0.06)	(0.06)
Frontier governorates	–0.08	–0.07	–0.07	–0.22***	–0.25***	–0.23***
	(0.07)	(0.08)	(0.07)	(0.07)	(0.07)	(0.07)
Has at least one child (ref: no children)	0.24***	0.24***	0.24***	0.29***	0.29***	0.29***
	(0.06)	(0.06)	(0.06)	(0.08)	(0.08)	(0.08)
2014 (ref: 2005)	0.02	0.01	–0.00	–0.09	–0.08	–0.22
	(0.04)	(0.04)	(0.11)	(0.06)	(0.07)	(0.12)
Intercept	0.39*	0.34	0.42*	0.60*	0.77**	0.72**
	(0.19)	(0.19)	(0.21)	(0.23)	(0.27)	(0.26)
Anderson canonical correlation LR test (χ^2)	460.94***	211.02***	139.74***	460.94***	211.02***	139.74***
Cragg-Donald F statistic	234.54***	53.08***	35.03***	234.54***	53.08***	35.03***
Hansen-Sargan (χ^2)	0.677	0.802	3.311	0.253	2.842	6.177

Note. SE = standard error. LR = likelihood ratio. IPV = Intimate partner violence. H = W = both spouses educated to the same level. W > H = wife is better educated. H > W = husband is better educated. Reference categories and standard errors are in parentheses. Weighted statistics with unweighted sample size. Sensitivity analyses can be found in Appendix B, Tables B.2 (alternative measure of lifetime physical and psychological IPV) and B.3 (binary measure of physical and psychological IPV).
† $p < .10$ * $p < .05$; ** $p < .01$; *** $p < .001$ (two-tailed tests).

Model 2A also tested the association between women's employment and physical IPV. The results support Hypothesis 1B derived from individual autonomy theory, which predicts that employed women are less likely than unemployed women to experience IPV. Specifically, women's employment was significantly and negatively associated with physical IPV ($\beta = -.80$, $p < .05$). I introduced an interaction term between women's and their spouses' employment in Model 2B. Hypothesis 2B, which states that employed women are less likely to experience IPV when their male partners are unemployed or in low-status occupations, was supported by the results. The negative association between women's employment and physical IPV was stronger for women with blue-collar or unemployed spouses than women with white-collar spouses ($\beta = -.93$, $p < .01$ and $\beta = -.16$, *ns*, respectively). The between-coefficient difference was also statistically significant at the 10% level.

Differences before and after the Arab Spring. Hypothesis 4A predicted that the positive association between women who are better-educated than their spouse and IPV would be stronger before compared to after the Arab Spring. This was not supported by the results for psychological IPV in Model 1C: the interaction term between women's relative education and survey year was not statistically significant at the 10% level. Hypothesis 4B, which predicts that the positive association between women's employment and IPV would be stronger before compared to after the Arab Spring, was also not supported by the results in Model 1C. The interaction between women's employment and survey year was not statistically significant at the 10% level.

Regarding physical IPV, the results from Model 2C do not support Hypothesis 4A, as the between-coefficient difference was not statistically significant at the 10% level. Similarly, I find no support for Hypothesis 4B in terms of the association between women's employment and physical IPV before compared to after the Arab Spring. The between-slope and between-coefficient differences were not statistically significant at the 10% level.

4.4.3 Sensitivity analyses

I conducted three sets of sensitivity analyses to evaluate the robustness of the findings (See Appendix B, Table B.2 and B.3). First, I repeated the analyses using the alternative

measures of lifetime prevalence of psychological and physical IPV. The direction and size of the coefficients were consistent with those for the 2SLS models across the different model specifications. Second, to assess the robustness of model outcomes to the inclusion of additional covariates, I added a categorical variable for marriage duration. The coefficients were statistically insignificant at the 10% level and the results remained unchanged. Third, using binomial logistic regressions, I repeated the analyses based on a binary measure for exposure to physical and psychological IPV in the preceding 12 months. For this, the binary outcome variable distinguished women who experienced none or any physical and psychological IPV, respectively, in the preceding 12 months. The results were also consistent with those for the 2SLS models.

4.5 Discussion

Despite the high prevalence of IPV in the Arab world, empirical evidence on the correlates of IPV in these societies remains limited. Building on existing research conducted in Egypt (Yount, 2005a; Yount & Li, 2009; Yount & Li, 2010), this study makes several new contributions by (1) examining the correlates of different forms of IPV, (2) expanding the analysis to include women's employment and harnessing a 2SLS regression design to account for the bidirectional relationship between employment and IPV, and (3) comparing the relationships between women's resources, gender performance, and IPV before and after the Arab Spring.

Consistent with individual autonomy theory (Goode, 1971), the results show that women's education is negatively associated with risk of physical IPV. This is observed for women who receive secondary or higher-level education. Educated women are more likely to support and pursue more equitable gender roles. Most women in Egypt complete their education before marriage, potentially allowing them to apply their education in the spouse selection process. IPV risk may decline if women select spouses who share similar values, which discourage the use of violence. As autonomy theory suggests, education reduces women's dependence on their spouse and empowers them to leave abusive relationships. However, the West's social acceptance of divorce is not shared by the Arab world. The centrality of marriage and family in Egyptian culture persists, and divorce continues to be stigmatised. Hence, the effectiveness of education in reducing IPV against women in Egypt may be achieved by mitigating the risks of

IPV via spouse selection or by resisting IPV within marriage. The insignificant effect of women's relative education contradicts both bargaining and gender performance theories. Specifically, the results suggest that, at least when controlling for women's absolute education, women's relative education is not associated with psychological or physical IPV.

Although some studies have applied IV approaches to explain the endogeneity of women's employment (Bhattacharya, 2015; Lenze & Klasen, 2017), none have applied such methods to IPV in Egypt. This study is the first to have explicitly controlled for the endogeneity of women's employment in predicting IPV in Egypt. No evidence of a relationship between women's employment and psychological IPV exists; however, the results show a negative relationship between women's employment and physical IPV. While this finding provides support for individual autonomy theory (Goode, 1971), disentangling whether it is the economic empowerment or necessity of employment that offers protection against IPV lies beyond the scope of this study. Nevertheless, the results suggest that women's economic resources and their potential to threaten their spouses' ability to meet gender role expectations does not translate into a higher risk of physical IPV. Instead, women's involvement in paid work can deter certain forms of IPV.

I further analysed the effect of women's employment vis-à-vis their spouses' employment on IPV. The spouses' employment moderates the relationship between women's employment and their risk of IPV. Most notably, the negative association between women's employment and physical IPV is stronger among women with unemployed or blue-collar spouses. This finding contrasts with gender performance theories (West & Zimmerman, 1987), which we might expect to hold in contexts where gender roles are shaped by patriarchal norms. Instead, the evidence supports the idea that women's employment affords them greater bargaining power when their spouses are in low-status occupations. Alternatively, while Egyptian society might disapprove of women's atypical gender performance, the financial maintenance of the family may override the spouse's discontent and use of IPV. Although this finding does not necessarily invalidate the importance of cultural norms in Egypt, it suggests that the results of studies conducted in Western settings are partially generalisable.

The findings also suggest that the predictions of individual autonomy theory retain their pre-Arab Spring relevance. Whereas previous studies have explored women's decision-making autonomy and employment as proxies for women's empowerment after the Arab Spring (Bargain et al., 2019; El-Mallakh et al., 2018), I focused on their risk of IPV. Based on the widespread assumption that women's political participation and improved labour market outcomes during and after the revolution would bring about more equitable gender roles (Bargain et al., 2019; El-Mallakh et al., 2018), I hypothesised that I would find less support for gender performance theories after the Arab Spring. Instead, women's education and employment after the Arab Spring did not provide more effective protection against IPV compared to before the Arab Spring. The results indicate that these short-lived revolutions have failed to provide women with the leverage to challenge traditional gender roles and reduce their risk of IPV in Egypt. To the extent that the Arab Spring related changes altered the relationship between women's resources and IPV, the findings suggest that political transitions are limited in their ability to empower women.

Finally, the results underscore the importance of analysing and comparing the correlates of both physical and psychological IPV. The associations identified in the 2SLS regression analyses show a different pattern of relationships between women's resources and different forms of IPV. Women's education and employment emerged as deterrents of physical IPV. Goode (1971) suggested that the availability of resources increase women's individual autonomy and can offer protection from IPV. This view receives consistent support in the models that predict physical IPV. In accordance with bargaining theory (Lundberg & Pollack, 1993; Macmillan & Gartner, 1999), women's employment vis-à-vis their spouses' is also negatively associated with their risk of physical IPV when their spouses are unemployed or in low-status occupations compared to other men. I also found that women's education was only marginally negatively associated with psychological IPV and found no association between women's employment and psychological IPV. Women's relative education and employment vis-à-vis their spouses' was also not associated with psychological IPV. Therefore, women's education, employment, and employment vis-à-vis their spouses' can safeguard against physical IPV. However, they do not appear to predict the risk of psychological IPV—that is, neither resource theories nor feminist theories receive

strong support. These results are sustained when the moderating effect of the Arab Spring is considered.

This study has several limitations. First, the analysis was based on cross-sectional data on IPV, which prevented me from asserting causal relations. Second, the DHS did not include measures on gender ideology, which likely influences the prevalence of IPV against women (Yount & Li, 2009). I controlled for several potential confounders, including religious denomination, which is likely to promote views regarding gender roles and geographical location, which may capture differences in gender ideology. Third, as less than 0.2% of women indicated that they initiated physical violence toward their spouse, I could not include this variable as a control. In the future, longitudinal analyses are needed to examine how changes in the economic status of individual women affect their IPV risk over time. The relationship between women's employment and physical IPV also merits further exploration to pinpoint whether it is the empowerment or necessity of employment that offers protection against IPV. Finally, as this study relied on women's self-reports of all variables included in the analysis, future work should consider incorporating dyadic data.

5 Patrilineal Fertility and Marital Power in Egypt

5.1 Introduction

Family scholars have dedicated much attention to the inequalities of power in marriage (Ghose, Feng, Tang, Yaya, & He, 2017). Marital power is frequently defined in terms of spousal decision-making, where the exercise of power means the ability to determine the outcome of decision-making processes (Becker, 1973, 1974; Blood & Wolfe, 1960; Lundberg & Pollak, 1996). So far, however, there have been few research efforts into the extent to which aspects of the Arab patrilineal family affect marital power and decision-making. This study aims to fill this gap by providing one of the first analyses of women's fertility as a gendered resource that can potentially shape Egyptian women's marital power by increasing their involvement in the marital decision-making process. The traditional division of household labour confines women to unpaid housework and men to paid work. As a result, men and women have access to a set of gender-specific resources that can be used in exchange for more marital power (Tichenor, 1999). For women, their fertility, along with expectations of motherhood, outweighs their breadwinning potential. The fact that men continue to hold disproportionally greater power than women over decisions within marriage despite women's progress in education and employment in Egypt makes gendered resources, and how they might interact with other types of resources, an important empirical focus.

Traditional understanding of power inequalities in marriage derives primarily from resource and gender-performance theories. This literature has focused on education and employment as key contributors to women's empowerment, while acknowledging the role of gender as shaping, and being shaped by, marital power (Hu & Yeung, 2019; Samari & Pebley, 2015). However, most Western contexts in which the bulk of research into women's marital decision-making power has been conducted display a degree of gender egalitarianism that is not shared by their Middle Eastern, patriarchal

counterparts. As a result, the distribution of marital power and its effects on women's decision-making is less well understood in non-Western contexts where women's access to and application of resources can differ, and where gender norms may constrain the power women can derive from economic resources (work) and their human capital (education).

Key features of the Egyptian family that may impact decision-making, such as patrilineal descent rules, merit scholarly attention. Egypt is characterised as a patriarchal and male-dominated society where lineage is based on patrilineal principles (Inhorn, 2003; Moghadam, 2004). Following marriage, a wife is incorporated into her husband's lineage, and it is through sons that property, land, and other resources are transmitted from one generation to the next (Inhorn, Birenbaum-Carmeli, Tremayne, & Gürtin, 2017; Yount, 2005a). The significance of a male child to the growth of the family lineage results in a strong desire for sons (Yount, 2005a). Therefore, a woman's ability to bear sons is important, not only for her husband's family but also in terms of securing her position within the family. Examining women's patrilineal fertility (i.e. having at least one son) as a gendered resource may yield new insights into how the reproductive capabilities of women in patriarchal-patrilineal societies affect the availability and distribution of marital power and, in turn, women's decision-making.

This chapter also explores whether and how women's patrilineal fertility is conditioned by women's education and employment. In recent years there have been significant improvements in women's education. This is reflected in women's increased involvement in higher education, where they have surpassed their male counterparts at the secondary and university levels (Zeitoun, 2018). Efforts to promote women's labour force participation, by comparison, have not been as successful. Growth in women's employment rates has been slow and still lags behind most Western developed countries (Assaad & Krafft, 2015; Barsoum, 2019). Women's resources, defined in terms of their education and employment, may determine whether they turn to patrilineal fertility as an alternative source of power. Specifically, women who are resource-rich presumably have more marital power than do their counterparts who lack these resources, and are less likely to rely on the birth of a son.

Using nationally representative data from the Egypt Labour Market Panel Surveys (ELMPS), the aim of this chapter is twofold: (1) to outline the association between bearing a son and women's say in various domains of decision-making in the household; and (2) to identify whether the relationship between bearing a son and women's decision-making is moderated by women's education and employment. The originality of this study lies in distinguishing patrilineal forms of bargaining and examining how they operate alongside women's education and employment.

5.2 Theoretical considerations

5.2.1 Resource-based bargaining

Of the various theoretical models used in the study of marital power, resource theory has received the most empirical support. The basic argument is that each spouse's socioeconomic resources determine the availability and distribution of power in marriage (Becker, 1973, 1974; Blood & Wolfe, 1960; Lundberg & Pollak, 1996). Accordingly, women who are well-educated and employed or have more of these resources relative to their husband can exercise more power in the decision-making process. Men have traditionally had greater access to and control over resources because of their breadwinning role and, as a result, often have greater power and more say in household decisions.

Scholars have highlighted women's education and employment as important and strongly predictive of their marital power. Women's education improves their cognitive abilities, enabling them to make better-informed decisions (Kabeer, 2005; Luz & Agadjanian, 2015). It can expose women to egalitarian gender ideologies that promote more equitable decision-making between spouses (Thijs et al., 2019). Educated women may have better labour market prospects and thus are more likely to be in paid employment (Becker, 1993); employed women can generate their own income, thereby financially empowering themselves and strengthening their marital power (Gardiner, Robinson, & Fakhfakh, 2016; Winkler, 2016).

A large body of research has documented how women's education and employment impacts their decision-making power. In Rwanda, women's education was associated

with an increased probability of women taking household decisions alone rather than jointly with their spouse (Musonera & Heshmati, 2017), and in Nepal, women with secondary education were more likely to have a say in large household purchases than women with primary education (Acharya et al., 2010). Several studies have found a significant association between women's employment and decision-making power. For instance, Kishor and Subaiya's (2008) cross-cultural study demonstrated a positive association between women's paid employment and household decision-making, and Antman (2014) shows that in Mexico, women's employment increased the likelihood of joint spousal decision-making. Empirical evidence from Egypt generally supports the idea that women's employment enhances their decision-making power, although research has been less consistent regarding the relationship between women's education and decision-making (Friedrich, Engelhardt, & Schulz, 2020; Nazier & Ramadan, 2018; Samari, 2019b; Yount, 2005a).

Other explanations of marital power have been provided in light of women's socioeconomic dependence on their husbands. Women who have more resources compared to their spouses are assumed to be better able to negotiate for more say in household decisions. The underlying logic is that the more economically dependent spouse has fewer alternatives outside the marriage and therefore less power to influence or dictate decisions within the marriage (Attanasio & Lechene, 2002; Lundberg & Pollak, 1996). Having relatively fewer resources than the spouse has been associated with women's household decision-making in a variety of settings. In Egypt, India, and Tanzania, women who are better-educated than their spouse were more likely to have more say in household decision-making (Anderson, Reynolds, & Gugerty, 2012; Samari & Pebley, 2015). A study of married or cohabiting couples in Ecuador observed that female-earner and dual-earner couples were more likely to make decisions jointly than male-earner couples (Deere & Twyman, 2012).

In sum, resource theory suggests that the availability and distribution of marital power is a function of (1) women's education and employment, and (2) women's education and employment in relation to their spouses. Past research on women's marital power in Egypt is incomplete in the sense that it does not account for both absolute and relative differences in women's education and employment. For example, a woman who is employed but is also dependent on the employment of her spouse is still in a better

bargaining position than a woman who is unemployed and dependent on the employment of her spouse (McKeever & Wolfinger, 2001; Van Damme & Dykstra, 2018). Specifically, the former can exit the relationship and still possess some financial independence, whereas the latter may struggle economically. Based on the preceding discussion, I formulate the following two hypotheses to test the effects of women's absolute (H1A and H1B) and relative resources (H2A and H2B) on their household decision-making power:

> **Hypothesis 1:** Compared to less-educated women, better-educated women will have more say in household decisions **(H1A)**. Compared with unemployed women, employed women will have more say in household decisions **(H1B).**
>
> **Hypothesis 2:** Women who are equally or better-educated than their spouse will have more say in household decisions than women who are less-educated than their spouse **(H2A)**. Women in dual-earner families will have more say in household decisions than women in male-breadwinner families **(H2B)**.

Alternatively, if women engage in gender performance to preserve their partner's masculinity then we might expect the opposite of Hypothesis 2 to hold true: women who have more resources relative to their spouse will 'do femininity' to offset their gender-atypical roles.

5.2.2 Patrilineal bargaining

While previous research mainly conceptualised economic resources as a gender-neutral source of bargaining power for women and men, inadequate attention has been paid to the sociocultural construction and embeddedness of gendered resources, particularly in relation to patrilineal cultures. Comparative advantages in home and market work means men typically specialise in paid labour and women in domestic work (Becker, 1991). Through the amicable exchange of resources between spouses, this arrangement can lead to more productive marriages and better overall household well-being (Tichenor, 1999; Zuo & Bian, 2001).

Consistent with this view, women have a biological advantage over men in bearing and rearing children. There exists a limited choice of acceptable female roles in Egypt

beyond those situated within the home. Instead, childbearing and marriage form a large part of the lore of womanhood (Inhorn, 1996, 2012). Reproduction within marriage is regarded as a cultural imperative, with motherhood viewed as constituting one of the most important pathways to social acceptance (Dodoo & Frost, 2008; Fledderjohann, 2012; Inhorn et al., 2017; Inhorn, 2003, 2012). Specifically, the social and economic ramifications of childlessness for women are many: they involve not only emotional distress, but also the risk of marital abandonment and instability, polygamy, and exposure to life-threatening forms of medical intervention (Fledderjohann, 2017; Ouzgane, 2006).

Fundamentally, in patrilineal societies, children's gender is an important consideration in the literature. The birth of a son represents a key reproductive goal among Egyptian couples for several reasons, including traditional expectations of old-age support where sons can serve as an important means of intergenerational insurance for the parents (Yount, 2005a); principles of patrilineal descent which dictate that sons are required to carry on the family name (Inhorn et al., 2017); post-marital patrilocal residence, meaning daughters join their spouses' families whereas sons remain within or close to their natal homes (Yount, 2005b); and the economic value of sons, which exceeds that of daughters (Yount, 2003, 2005a).

The predominance of son preference in Egyptian society means that having at least one son may enhance women's decision-making power by engendering feelings of accomplishment and family unity (Inhorn et al., 2017). In providing a male heir, a woman makes a significant contribution to the growth and continuity of her husband's lineage and, at the same time, helps fulfil cultural expectations of parenthood (Inhorn et al., 2017; Samari, 2017a). The birth of a son can also strengthen her position in her husband's family and raise her status in the household (Lee-Rife, 2010). Patrilineal fertility may function as a gendered resource that is socially approved and intuitively improves women's social standing and marital power in Egypt.

Against this backdrop, a more culturally attuned analysis is required to account for these gender dynamics—one that pays attention to pronatalist ideologies that define and assign status based on women's reproductive capabilities. There is some empirical evidence to suggest that women's agency and fertility are linked, although most

evidence is indirect. In Malaysia, low economic autonomy increased women's childbearing intentions (Tfaily, 2004). Similarly, in Egypt, women who were more autonomous were more likely to have children and to have a greater number of total births (Samari, 2017a; Salem, 2011). Therefore, women's patrilineal fertility is likely to increase women's household decision-making power, as specified in Hypotheses 3A and 3B:

Hypothesis 3A: Patrilineal fertility (i.e. having at least one son) is positively associated with women's household decision-making power.

5.2.3 Intersection between women's resources and patrilineal fertility

Although patrilineal fertility can confer Egyptian women with bargaining power in the household, it is also possible that patrilineal bargaining may be conditional on and moderated by economic resources. In other words, the perceived necessity to bear a son among women may vary relative to the amount of resources they have. Very few empirical efforts have been made to disentangle levels of resources and how they may interact with patrilineal bargaining in similar or different ways.

First, women's education and employment are shown to reduce son preference and fertility. Education plays an increasingly important role in shaping women's gender-role attitudes (Martin, 1995; Shu, 2004). Exposure to more egalitarian beliefs and values might lead women to challenge patrilineal norms and practices (Martin, 1995). By increasing women's autonomy in the household, education may allow women to exert greater control over reproductive decisions (Samari, 2018) and to renegotiate or dismiss pressures from their spouse to conceive a son (Dodoo & Frost, 2008; Qian & Jin, 2018). Further, education enhances women's labour market outcomes (Becker, 1960), increasing their chances of employment and thereby reducing the economic necessity for sons (Raley, Mattingly, & Bianchi, 2006). Several empirical studies document strong negative associations between women's education and employment and their patrilineal fertility (Dodoo & Frost, 2008; Lin, 2009; Qian & Jin, 2018; Salem, 2011).

Second, women's education and employment relative to their spouse can improve their economic self-reliance and enable them to opt out of patrilineal fertility. Women who

are not dependent on their spouse's resources can have greater economic leeway and may be less pressured to bear sons (Attanasio & Lechene, 2002; Lundberg & Pollak, 1996). By comparison, when state provision of economic and social security is limited, sons can function as security assets (Mason, 1987). Bargaining between couples is done in light of the possibility of marital dissolution or in fear of the monopolisation of resources by the better-endowed spouse (Lundberg & Pollak, 1996; Salem, 2011). The tedious family court process, inability to support oneself, and undesirable social stigma attached to divorcees in Egypt may deter women from considering divorce in the first instance (Al-Sharmani, 2009, 2010). Instead, a son can represent an alternative form of protection if the spouse's resources are inaccessible because of death, illness, or deliberate restrictions. Consequently, women with fewer resources than their spouse, or who have the resources with which to bargain but choose to 'do gender' and align their roles with traditional expectations, may be more likely than women who have more resources than their spouse to draw on patrilineal fertility to derive marital power.

Third, rising household socioeconomic status (SES), often operationalised in terms of total household income, can erode son preference and reduce women's patrilineal fertility (Dribe & Smith, 2020; Dribe et al., 2017). The demand for children hinges on family income. Higher consumption aspirations typical of richer households increase the opportunity costs of having children, whereas poorer households are in greater need of economic safety nets and therefore may benefit more from the labour of sons (Caldwell, 2005; Dribe et al., 2017). A less researched but equally plausible explanation is that women of high SES are more likely to pursue more companionate "love" marriages compared to traditional arranged marriages (Hu, 2016), where greater concern for the wife's general and reproductive health might factor into fertility decisions (Mason, 1987). Lastly, rising household SES is associated with greater exposure to Western family ideals that encourage smaller families and child-gender indifference (Caldwell, 1982; Lin, 2009).

The preceding discussion can be summarised by the following three hypotheses. Focusing on the relationship between women's patrilineal fertility and household decision-making power, Hypothesis 4A tests the moderating effects of women's absolute education and employment, Hypothesis 4B tests the moderating effects of

women's relative education and employment, and Hypothesis 4C tests the moderating effects of household SES:

Hypothesis 4A: Patrilineal fertility matters more for women who have fewer economic resources (employment) and human capital (education) compared with women who have more of these resources, irrespective of their husband's resources.

Hypothesis 4B: Patrilineal fertility matters more for women who have fewer economic resources (employment) and human capital (education) relative to their husbands, compared with women who have more of these resources relative to their husbands.

Hypothesis 4C: Patrilineal fertility matters more for women's marital power in low-SES-status households than for women in high-SES-status households.

5.3 Method

5.3.1 Data and sample

The analysis draws on data from the 2006, 2012, and 2018 waves of the Egypt Labour Market Panel Survey (ELMPS), hereafter referred to as T_1, T_2, and T_3. The data is part of a national survey conducted by Egypt's Central Agency for Public Mobilisation and Statistics (CAPMAS) and the Economic Research Forum (ERF). It is the most inclusive source of publicly available microdata on the country. The survey utilises a multistage, stratified probability sample design and attempts to track and interview households included in previous waves, as well as individuals who may have split from their original households (Assaad & Krafft, 2013; Krafft, Assaad, & Rahman, 2019). The surveys cover a wide range of measures that are key to answering the research questions: women's employment status, education, fertility, marital decision-making, and various other demographic and socio-economic characteristics.

To assess the effects of women's patrilineal fertility on household decision-making power, I limit my sample to married women between 16 and 49 years old, as only this group of women have completed the decision-making module and provided information

on the spouse's education and employment status. Of the 10,909 women, 445 were removed for missing data on key variables such as education, household decision-making, and fertility. Little's test confirmed that the data were missing completely at random (Li, 2013). The final sample is an unbalanced panel of 10,464 observations including married women observed once (1,841), twice (4,258), or three (4,365) times. Table 5.1 presents means and standard deviations for all variables used in the analysis.

5.3.2 Outcome variables

Household decision-making. The reliability of women's decision-making capacity as a measurement of empowerment has been previously confirmed using the test-retest method (Samari, 2019b). Therefore, marital power was assessed using a series of nine decision-making questions. The questions measured the relative participation of the spouses and in-laws in the following decision areas: large and small purchases; visits to family, friends or relatives; food cooked on a daily basis; children's school attendance; children's medical care; wife's medical care; purchasing children's clothing and purchasing wife's clothing. Participants responded using a five-point scale, "respondent alone", "husband", "respondent and husband jointly", "in-laws" and "respondent, husband, in-laws jointly", scored from 1 to 5. For ease of interpretation, I recoded the nine variables so that an increase in the score indicated an increase in women's marital power: (1) decisions made by husband; (2) decisions made by both spouses; and (3) decisions made by wife.

After conceptually grouping the nine measures under financial, daily, and child-related decisions, principal component analysis (PCA) and varimax rotation showed that the nine measures formed three factors with an eigenvalue of 2.1, 1.5, and 2.0, respectively. The Bartlett method was then used to generate three factor scores (Yong & Pearce, 2013), with a higher score indicating a less traditional distribution of marital power. The Cronbach alpha measure was next applied to assess the reliability of measures and confirmed a high level of internal consistency between the constituent items for each measure (0.74, 0.63, and 0.74, respectively). Using various combinations by listwise removal of items did not increase the alpha coefficient. The Kaiser-Meyer-Olkin (KMO) test of sampling adequacy yielded a value above the 0.5 rule of thumb, justifying the use of PCA (0.71, 0.51, and 0.67 respectively).

5.3.3 Predictor variables

Patrilineal fertility. My main predictor variable was women's patrilineal fertility. The 2006, 2012, and 2018 ELMPS include a module on fertility and women's status which cover questions regarding the gender, birth year, and birth month of each child born. Women's patrilineal fertility was operationalised as a dummy variable, 0= "no son" and 1 = "has at least one son". The results were robust to the exclusion of birth-order variables, where there was no association between whether the son was the eldest or youngest on women's marital power. Overall, 75% of women in the sample have reported at least one son.

Women's absolute and relative education. These were measured in the following ways. First, women's absolute education was operationalised as the respondents' self-report of their highest level of education, coded as illiterate (22%), primary education (11%), secondary education (52%), and university or postgraduate education (13%). Second, I constructed three dummy variables to measure a spouse's relative education based on information provided by the female respondents. They distinguish couples in which both "spouses have the same education level" (53%), "the wife is better-educated" (17%), and "the spouse is better-educated" (28%).

Women's absolute and relative employment status. To measure women's absolute employment status, I included a dummy variable that takes on the value of 0 if women report being "unemployed during the past three months" (72%) and 1 if women report being "employed during the past three months" (28%). To measure spouses' relative employment status, I included three dummy variables which distinguish between male-earner households (69%), dual-earner households (27%), and households in which neither spouse is employed (3%). Households in which both spouses are employed are coded as dual-earner households; those with only the husband employed are male-earner households.

Household socio-economic status. To account for household socio-economic status, the ELMPS includes a composite asset-based index of wealth generated, using the durable assets and housing characteristics in the household questionnaire. The wealth

index is split into five categories consisting of poorest (18%), poor (20%), middle (22%), rich (19%) and richest (19%).

5.3.4 Covariates

In addition to the key predictors, other factors can contribute to decision-making power (Bradshaw, 2013; Musalia, 2018).

Age. With age, more senior women are more likely to have experienced independence and personal autonomy (Yount & Agree, 2004). The mean age of women in the sample is 34 years old.

Age at marriage. Marriage at a young age may restrict the women's long-term economic empowerment by disrupting their ability to participate in education or the labour market (Dahl, 2010). On average, women in the sample married at the age of 20.

Age at first birth. Empowerment at an earlier stage can be an important predictor of future empowerment (Samari, 2017a). Women who give birth at a younger age experience increased freedom of movement and make more household decisions (Samari, 2017a). On average, women in the sample first gave birth at the age of 22.

Has a daughter/s. I distinguish between women who do not have a daughter (0) and women who have at least one daughter (1). Approximately 71% of women in the sample have reported at least one daughter.

Area of residence. Women living in urban areas have increased options for employment opportunities and more access to educational institutions (Bradshaw, 2013). The sample was more or less evenly split between urban (40%) and rural (60%) residents.

Governorates. Previous research shows that women in Upper Egypt contribute less to household decisions compared to women in Lower Egypt and urban governorates (Samari, 2019b). Women in the sample are distributed among 22 governorates with

most residing in Lower Egypt governorates (47%), followed by Upper Egypt governorates (36%), and urban governorates (16%).

Type of residence. Respondents who reside in a patrilocal residence may hold more traditional gender-role attitudes and share marital power between additional members in the household (Cheng, 2019). This measure was dichotomised as patrilocal households (9%) and nuclear households (91%). Households in which the wife lives with in-laws are patrilocal, and households in which spouses do not reside with the spouse's parents are coded as nuclear families.

Survey year. I included a dummy variable distinguishing the three survey years.

Table 5.1 Descriptive statistics for the full sample of women observed once, twice, or three times (*N* = 10,464)

	Full sample			
	Min	**Max**	**Mean/%**	**SD**
Marital decision making[a]				
Large financial decisions	–2.89	3.18	0	1.4
Daily decisions	–2.61	1.21	0	1.2
Child-related decisions	–2.75	2.45	0	1.4
Key predictors				
Fertility				
Has at least one son (ref: no son)	0	1	75.0	
Education				
Women (individual)				
Illiterate	0	1	22.3	
Primary education	0	1	11.5	
Secondary education	0	1	52.7	
University and post graduate education	0	1	13.5	
Women (relative)				
H = W	0	1	53.9	
W > H	0	1	17.5	
H > W	0	1	28.5	
Employment				
Employed (ref: unemployed)	0	1	27.9	
Women (relative)				
Male earner	0	1	68.9	
Dual earner	0	1	27.3	
Neither employed	0	1	3.7	
Household wealth				
Poorest	0	1	18.7	
Poor	0	1	20.3	
Middle	0	1	22.0	
Rich	0	1	19.7	
Richest	0	1	19.4	
Covariates				
Has at least one daughter (ref: no daughter)	0	1	71.2	

Urban residence (ref: rural)	0	1	40.3	
Region				
Urban governorates	0	1	16.8	
Lower Egypt governorates	0	1	47.1	
Upper Egypt governorates	0	1	36.1	
Patrilocal residence (ref: nuclear)	0	1	8.8	
Age	16	49	33.8	7.9
Age at marriage	13	32	20.5	3.7
Age at first birth	15	34	22.1	3.8
Survey year				
T_1	0	1	33.4	
T_2	0	1	35.6	
T_3	0	1	30.9	

Note. Min = minimum value, Max = maximum value; M = mean, SD = standard deviation; [a] standardised scores. < = less than, > = greater than; H = husband, W = wife. For dummy variables, 0 = No and 1 = Yes. T_1 = 2006, T_2 = 2012, and T_3 = 2018. Mean values reported for continuous variables and percentages for dummy and categorical variables. Percentages may not add up to 1 due to rounding. Reference groups are shown in parentheses. Weighted statistics and unweighted sample size.

5.3.5 Analytical Strategy

The analysis is performed in two steps. First, I fitted random-effects models to estimate the association between women's patrilineal fertility (i.e. having at least one son) and household decision-making power. Random-effects models are well-suited for analysis of data with limited number of waves and time-invariant covariates. For example, married women's educational attainment was unlikely to change from one wave to the next (< 2% of cases). Separate models were fitted for women's financial (Model 1A), daily (Model 1B), and child-related (Model 1C) decision-making power.

Next, I examine within-individual changes in women's household decision-making power using fixed effects models. This method overcomes selectivity issues that may arise in estimating the effects of women's patrilineal fertility on their decision-making power. For example, women with less marital power are less likely to be able to participate in the labour market and more likely to have children. In particular, the unobserved characteristics of the women in the sample, such as childbearing preferences and gender role beliefs may confound the relationship between women's patrilineal fertility and their household decision making. The fixed effects approach controls for all time-invariant factors, including omitted or unobserved variables. However, variables that change over time are included in the analysis. When estimating the fixed effects regression models, I therefore controlled for survey year, women's age, whether women have a daughter, and employment status. Together, the random effects models identify the observable factors that explain the association between women's

patrilineal fertility and their decision-making power, whereas the fixed effects models account for the unobservable factors. The variance inflation factor (VIF < 3) indicated no severe multicollinearity in the models (Li, 2013).

5.4 Results

5.4.1 Associations between women's resources, patrilineal fertility, and household decision-making

Table 5.2 presents the results from the random-effects analysis of the association between women's resources, patrilineal fertility, and household decision-making power. Models 1A, 1B, and 1C predict women's financial, daily, and child-related decision-making power, respectively.

Hypothesis 1A, that better-educated women will have more say in household decisions compared to less-educated women, was not supported. Women's education was not significantly associated with women's financial, daily, or child-related decision-making power at the 10% level. In other words, better-educated women were no more likely than their less-educated counterparts to participate in household decisions.

By contrast, I find strong support for Hypothesis 1B, which states that employed women will have more say in household decisions than their unemployed counterparts. Women's employment was statistically significant and positively associated with women's financial ($\beta = .36$, $p < .001$), daily ($\beta = .18$, $p < .05$), and child-related ($\beta = .32$, $p < .001$) decision-making. Even with controlling for spouses' employment, women's employment affords them greater decision-making power net of the husbands' economic resources. This finding fits well with the predictions of resource theory.

Hypothesis 2A, which stated that women who are equally as educated or better-educated than their spouse will have more say in household decisions than women who are less-educated than their spouse, received partial support. When compared with their equally educated counterparts, being relatively better-educated than the spouse was significantly associated with a 0.08-point increase in women's child-related decision-

making power ($p < .05$). In contrast, women's relative education was not significantly associated with financial or daily decision-making power at the 10% level.

Turning to women's relative employment status, Hypothesis 2B, which predicted that women in dual-earner families will have more say in household decisions than women in male-earner families, goes unsupported. Women's relative employment status was not significantly associated with women's financial or daily decision-making power, whereas, compared with male-earner households, being in dual-earner households was significantly associated with a 0.19-point decrease in women's child-related decision-making power ($p < .05$). These findings are at odds with bargaining theory and appear instead to show support for gender-performance theory: when both spouses are employed, traditional gender-power relations are undermined, and women may overcompensate for this by withdrawing from household decision-making processes.

The results from Models 1A, 1B, and 1C supported gendered-resource-theory Hypothesis 3A, that patrilineal fertility is positively associated with women's household decision-making power. Women's patrilineal fertility was predictive of all three decision-making outcomes. Compared to women without sons, having at least one son was significantly and positively associated with women's financial ($\beta = .08$, $p < .05$), daily ($\beta = .09$, $p < .01$), and child-related ($\beta = .17$, $p < .001$) decision-making power. These results provided preliminary support for the role of son preference and women's patrilineal fertility in determining women's marital power and say in household decisions.

Table 5.2 Random effects models predicting women's marital decision-making power (*N* = 10,464).

	Financial Model 1A B (SE)	Daily Model 1B B (SE)	Child-related Model 1C B (SE)
Has son/s (ref: no son)	0.08*	0.09**	0.17***
	(0.03)	(0.02)	(0.04)
Has daughter/s (ref: no daughter)	–0.06†	–0.01	0.05
	(0.03)	(0.02)	(0.03)
Education (ref: illiterate)			
Primary education	0.10	0.04	0.07
	(0.05)	(0.05)	(0.05)
Secondary education	0.07	0.05	0.01
	(0.04)	(0.03)	(0.04)
University and post graduate education	0.07	–0.03	–0.16
	(0.06)	(0.06)	(0.06)
Relative education (ref: H = W)			
W > H	–0.00	0.01	0.08*
	(0.04)	(0.04)	(0.04)
H > W	0.02	0.01	–0.02
	(0.04)	(0.03)	(0.03)
Employed (ref: unemployed)	0.36***	0.18*	0.32***
	(0.09)	(0.08)	(0.09)
Relative employment (ref: male earner)			
Dual earner	–0.18	–0.08	–0.19*
	(0.09)	(0.07)	(0.09)
Neither employed	0.12	0.02	0.04
	(0.07)	(0.06)	(0.07)
Household wealth (ref: poorest)			
Poor	0.04	0.02	–0.01
	(0.04)	(0.03)	(0.05)
Middle	0.03	0.01	0.03
	(0.04)	(0.03)	(0.04)

Rich	0.02	0.00	0.03
	(0.05)	(0.05)	(0.05)
Richest	0.06	0.08	0.03
	(0.05)	(0.04)	(0.05)
Rural residence (ref: urban)	–0.15***	–0.01	–0.13***
	(0.04)	(0.03)	(0.03)
Nuclear household (ref: patrilocal)	0.15**	0.22***	0.22***
	(0.04)	(0.04)	(0.05)
Age	0.01***	0.01***	–0.00
	(0.00)	(0.01)	(0.00)
Age at first birth	0.01	–0.02***	–0.01
	(0.01)	(0.01)	(0.01)
Age at marriage	–0.01	–0.00	0.01
	(0.01)	(0.01)	(0.01)
Region (ref: urban Governorates)			
Lower Egypt Governorates	–0.16***	0.08*	–0.06
	(0.04)	(0.04)	(0.04)
Upper Egypt Governorates	–0.56***	–0.49***	–0.57**
	(0.05)	(0.04)	(0.04)
Year (ref: T_1)			
T_2	0.02	–0.12***	–0.06
	(0.03)	(0.02)	(0.03)
T_3	0.31***	–0.27***	0.56***
	(0.03)	(0.03)	(0.03)
Intercept	–0.43***	0.14	–0.16
	(0.13)	(0.11)	(0.13)
Sigma U	0.30	0.38	0.36
Sigma E	1.37	1.08	1.31
RHO	0.04	0.11	0.07

Note. SE = standard error. < = less than. > = greater than. W = wife, H = husband. T_1 = 2006, T_2 = 2012, and T_3 = 2018. Sensitivity analyses can be found in Appendix C, Table C.1 (age at marriage as a categorical variable). *p < .05 **p < .01 ***p < .001 †p < .10 (two-tailed).

5.4.2 Fixed effects estimates

Table 5.3 presents the results of the fixed effects regression models. Models 2A, 2B, and 2C predict women's financial, daily, and child-related decision-making power, respectively.

Table 5.3 Fixed effects models predicting women's marital decision-making power (*N* = 8,623).

	Financial Model 2A B (SE)	Daily Model 2B B (SE)	Child-related Model 2C B (SE)
Son born (ref: no son)	0.25**	0.09	0.13
	(0.10)	(0.08)	(0.08)
Daughter born (ref: no daughter)	–0.14	–0.02	0.04
	(0.11)	(0.08)	(0.09)
Year (ref: T_1)			
T_2	0.09	0.14	–0.13
	(0.12)	(0.09)	(0.13)
T_3	0.52	0.23	0.43
	(0.24)	(0.19)	(0.25)
Age	–0.00	–0.03*	0.00
	(0.01)	(0.02)	(0.02)
Employed (ref: unemployed)	0.01	0.18**	0.12
	(0.07)	(0.05)	(0.06)
Intercept	–0.09	1.15**	–0.46
	(0.56)	(0.44)	(0.57)
Sigma U	1.19	1.09	1.11
Sigma E	1.34	1.06	1.30
RHO	0.44	0.51	0.42

Note. SE = standard error. T_1 = 2006, T_2 = 2012, and T_3 = 2018. Models include only time variant variables. Sample limited to women observed twice (*N* = 4,258) or three times (*N* = 4,365). *p < .05 **p < .01 ***p < .001 †p < .10 (two-tailed).

The results provide further evidence in support of Hypothesis 3A, that women's patrilineal fertility increases their household decision-making power. Compared with the random effects estimates in Table 5.2, in Model 2A the magnitude of the effect of a change in women's patrilineal fertility on their financial decision-making increases, and remains statistically significant (β = .25, p < .01). By contrast, the results from Model 2B and Model 2C show that women's patrilineal fertility is no longer significantly associated with women's daily or child-related decision-making power (β = .09, p > .10 and β = .13, p > .10, respectively). That is, women's daily and child-related decision-making power does not appear to be affected by whether they give birth to a son.

In line with the results obtained earlier, the fixed effects estimates therefore support the notion that giving birth to a son can enhance women's status in the household and

increase their decision-making power. This is broadly consistent with previous research that finds that women who have a son hold greater marital power in Egypt than their counterparts without a son (Salem, 2011).

5.4.3 Moderation by women's education, employment, and household socioeconomic status (SES)

Results from the random effects and fixed effects models are presented in Table 5.4 and Table 5.5, respectively. Models A include the interaction between women's patrilineal fertility and their education, Models B include the interaction between women's patrilineal fertility and their employment, Models C include the interaction between women's patrilineal fertility and their relative education, Models D include the interaction between women's patrilineal fertility and their relative employment, and Models E include the interaction between women's patrilineal fertility and household SES. The results of the fixed effects models were consistent with those obtained from the random effects models.

Hypothesis 4A, which predicted that patrilineal fertility matters more for women's decision-making power when they are in possession of fewer economic resources and human capital irrespective of their husband's resources, was not supported. I observed no statistically significant interaction ($p < .10$) between women's patrilineal fertility and their education or their employment, suggesting that the relation between having at least one son and women's financial, daily, and child-related decision-making power did not differ across women's absolute level of education.

To examine the moderating effects of women's relative resources, I included a two-way interaction between women's relative education and their patrilineal fertility and an interaction between women's relative employment status and their patrilineal fertility. The results do not support Hypothesis 4B, that patrilineal fertility matters more for women's household decision-making power when they are in possession of fewer economic resources and human capital relative to their husbands. The relationship between having at least one son and women's financial, daily, and child-related decision-making power did not differ by women's relative employment status (i.e. whether they were in a male-earner or dual-earner family). Similarly, women's

education relative to their spouse did not moderate the relationship between having at least one son and women's financial, daily, or child-related decision-making power.

Lastly, Hypothesis 4C, which stated that patrilineal fertility matters more for women's household decision-making power in low-SES households than for women in high-SES-status households, was also not supported. None of the interaction terms between women's patrilineal fertility and household-wealth quintiles were found to be statistically significant at the 10% level for women's financial, daily, or child-related decision-making power. Taken together, these results suggest that the effects of having at least one son on women's household decision-making power are not conditional on women's resources.

Table 5.4 Random effects models predicting women's marital decision-making power including interactions between women's patrilineal fertility and (A) education, (B) employment, (C) relative education, (D) relative employment, and (E) household SES (*N* = 10,464).

Financial decision making	**Model 3A B (SE)**	**Model 3B B (SE)**	**Model 3C B (SE)**	**Model 3D B (SE)**	**Model 3E B (SE)**
Has son/s (ref: no son)					
Has son × illiterate	0.17				
	(0.08)				
Has son × primary education	–0.01				
	(0.10)				
Has son × Secondary education	0.06				
	(0.04)				
Has son × University and post graduate education	0.11				
	(0.08)				
Has son × unemployed		0.05			
		(0.04)			
Has son × employed		0.14			
		(0.06)			
Has son × H = W			0.06		
			(0.04)		
Has son × W > H			0.04		
			(0.07)		
Has son × H > W			0.14		
			(0.06)		
Has son × male earner				0.04	
				(0.04)	
Has son × dual earner				0.12	
				(0.06)	
Has son × neither employed				0.49	

				(0.19)	
Has son × poorest					0.06
					(0.08)
Has son × poor					0.11
					(0.07)
Has son × middle					0.04
					(0.07)
Has son × rich					0.11
					(0.07)
Has son × richest					0.06
					(0.07)
Intercept	–0.51***	–0.42**	–0.42**	–0.42**	–0.42**
	(0.15)	(0.14)	(0.13)	(0.13)	(0.15)
Sigma U	0.29	0.29	0.30	0.30	0.30
Sigma E	1.37	1.37	1.37	1.37	1.37
RHO	0.04	0.04	0.04	0.04	0.04
Daily decision making	**Model 4A B (SE)**	**Model 4B B (SE)**	**Model 4C B (SE)**	**Model 4D B (SE)**	**Model 4E B (SE)**
Has son/s (ref: no son)					
Has son × illiterate	0.07				
	(0.07)				
Has son × primary education	0.04				
	(0.08)				
Has son × Secondary education	0.08				
	(0.04)				
Has son × University and post graduate education	0.17				
	(0.06)				
Has son × unemployed		0.06			
		(0.03)			
Has son × employed		0.14			
		(0.05)			
Has son × H = W			0.10		

			(0.04)		
Has son × W > H			–0.02		
			(0.06)		
Has son × H > W			0.15		
			(0.05)		
Has son × male earner				0.08	
				(0.03)	
Has son × dual earner				0.14	
				(0.05)	
Has son × neither employed				–0.21	
				(0.15)	
Has son × poorest					–0.06
					(0.07)
Has son × poor					0.02
					(0.06)
Has son × middle					0.13
					(0.05)
Has son × rich					0.11
					(0.06)
Has son × richest					0.19
					(0.06)
Intercept	0.16	0.15	0.14	0.15	0.26*
	(0.12)	(0.11)	(0.11)	(0.11)	(0.12)
Sigma U	0.38	0.38	0.38	0.39	0.39
Sigma E	1.08	1.08	1.08	1.08	1.08
RHO	0.11	0.11	0.11	0.11	0.11
Child-related decision making	**Model 5A B (SE)**	**Model 5B B (SE)**	**Model 5C B (SE)**	**Model 5D B (SE)**	**Model 5E B (SE)**
Has son/s (ref: no son)					
Has son × illiterate	0.16				
	(0.08)				
Has son × primary education	0.08				

	(0.10)				
Has son × Secondary education	0.22				
	(0.04)				
Has son × University and post graduate education	0.10				
	(0.08)				
Has son × unemployed		0.16			
		(0.04)			
Has son × employed		0.18			
		(0.06)			
Has son × H = W			0.16		
			(0.05)		
Has son × W > H			0.12		
			(0.07)		
Has son × H > W			0.23		
			(0.06)		
Has son × male earner				0.18†	
				(0.04)	
Has son × dual earner				0.17	
				(0.06)	
Has son × neither employed				0.02	
				(0.19)	
Has son × poorest					0.21
					(0.08)
Has son × poor					0.16
					(0.07)
Has son × middle					0.17
					(0.07)
Has son × rich					0.20
					(0.07)
Has son × richest					0.12
					(0.07)

Intercept	–0.17	–0.16	–0.15	–0.17	–0.20
	(0.15)	(0.13)	(0.13)	(0.14)	(0.14)
Sigma U	0.36	0.36	0.36	0.36	0.36
Sigma E	1.31	1.31	1.31	1.31	1.31
RHO	0.07	0.07	0.07	0.07	0.07

Note. Models include all variables included in Table 5.2. SE = standard error. < = less than. > = greater than. W = wife, H = husband. T_1 = 2006, T_2 = 2012, and T_3 = 2018. **p* < .05 ***p* < .01 ****p* < .001 †*p* < .10 (two-tailed).

Table 5.5 Fixed effects models predicting women's marital decision-making power including interactions between women's patrilineal fertility and (A) education, (B) employment, (C) relative education, (D) relative employment, and (E) household SES (*N* = 8,623).

Financial decision making	**Model 6A B (SE)**	**Model 6B B (SE)**	**Model 6C B (SE)**	**Model 6D B (SE)**	**Model 6E B (SE)**
Has son/s (ref: no son)					
Has son × illiterate	0.24				
	(0.20)				
Has son × primary education	0.53				
	(0.20)				
Has son × Secondary education	0.25				
	(0.11)				
Has son × University and post graduate education	0.07				
	(0.22)				
Has son × unemployed		0.27			
		(0.10)			
Has son × employed		0.19			
		(0.15)			
Has son × H = W			0.29		
			(0.11)		
Has son × W > H			0.13		
			(0.18)		
Has son × H > W			0.30		
			(0.16)		
Has son × male earner				0.27	
				(0.10)	
Has son × dual earner				0.16	
				(0.15)	
Has son × neither employed				0.65	
				(0.44)	
Has son × poorest					0.44

					(0.18)
Has son × poor					0.38
					(0.16)
Has son × middle					0.17
					(0.14)
Has son × rich					0.10
					(0.14)
Has son x richest					0.25
					(0.17)
Intercept	–0.10	–0.11	–0.22	–0.11	–0.29
	(0.58)	(0.56)	(0.56)	(0.56)	(0.57)
Sigma U	1.20	1.00	1.00	1.00	1.00
Sigma E	1.34	1.36	1.36	1.36	1.36
RHO	0.44	0.35	0.35	0.35	0.35
Daily decision making	**Model 7A B (SE)**	**Model 7B B (SE)**	**Model 7C B (SE)**	**Model 7D B (SE)**	**Model 7E B (SE)**
Has son/s (ref: no son)					
Has son × illiterate	–0.02				
	(0.17)				
Has son × primary education	0.47				
	(0.16)				
Has son × Secondary education	0.02				
	(0.09)				
Has son × University and post graduate education	0.06				
	(0.24)				
Has son × unemployed		0.06			
		(0.08)			
Has son × employed		0.19			
		(0.14)			
Has son × H = W			0.05		
			(0.10)		
Has son × W > H			0.23		
			(0.12)		

Has son × H > W			0.04		
			(0.14)		
Has son × male earner				0.08	
				(0.08)	
Has son × dual earner				0.15	
				(0.14)	
Has son × neither employed				–0.31	
				(0.29)	
Has son × poorest					–0.01
					(0.13)
Has son × poor					0.16
					(0.12)
Has son × middle					0.19
					(0.12)
Has son × rich					–0.05
					(0.12)
Has son × richest					0.12
					(0.18)
Intercept	1.12*	1.18***	1.20***	1.16**	1.21**
	(0.46)	(0.44)	(0.44)	(0.44)	(0.45)
Sigma U	0.95	0.94	0.95	0.94	0.94
Sigma E	1.08	1.08	1.08	1.08	1.08
RHO	0.44	0.43	0.44	0.43	0.43
Child-related decision making	**Model 8A B (SE)**	**Model 8B B (SE)**	**Model 8C B (SE)**	**Model 8D B (SE)**	**Model 8E B (SE)**
Has son/s (ref: no son)					
Has son × illiterate	0.12				
	(0.17)				
Has son × primary education	0.70				
	(0.18)				
Has son × Secondary education	0.11				
	(0.10)				

Has son × University and post graduate education	–0.21				
	(0.18)				
Has son × unemployed		0.12			
		(0.09)			
Has son × employed		0.16			
		(0.13)			
Has son × H = W			0.12		
			(0.10)		
Has son × W > H			0.17		
			(0.15)		
Has son × H > W			0.13		
			(0.15)		
Has son × male earner				0.13	
				(0.09)	
Has son × dual earner				0.11	
				(0.13)	
Has son × neither employed				0.18	
				(0.33)	
Has son × poorest					0.24
					(0.17)
Has son × poor					0.27
					(0.13)
Has son × middle					0.19
					(0.12)
Has son × rich					0.02
					(0.13)
Has son × richest					–0.07
					(0.16)
Intercept	–0.58	–0.43	–0.49	–0.42	–0.60
	(0.59)	(0.57)	(0.57)	(0.57)	(0.58)
Sigma U	0.98	0.97	0.97	0.97	0.97

Sigma E	1.32	1.32	1.32	1.32	1.32
RHO	0.35	0.35	0.35	0.35	0.35

Note. Models include all variables included in Table 5.3. Sample limited to women observed twice (N = 4,258) or three times (N = 4,365). SE = standard error. < = less than. > = greater than. W = wife, H = husband. T_1 = 2006, T_2 = 2012, and T_3 = 2018. *p < .05 **p < .01 ***p < .001 †p < .10 (two-tailed).

5.4.4 Sensitivity analyses

I performed several sensitivity analyses to assess the robustness of the models to alternate specifications (See Table C.1 in Appendix C). The reported results are robust to the exclusion of multiple variables, including the age gap between spouses and measures of women's customary forms of economic resources (Yount, 2005a), such as the bride price. I also varied the inclusion and operationalisation of age at marriage by first including it as a categorical variable in terms of whether a woman was underage at the time of marriage or was of marriageable age. A continuous variable for age at marriage was later included instead of the categorical variable. The main findings presented in this study remained consistent across the different model specifications.

5.5 Discussion

Using three waves of the ELMPS (2006, 2012, and 2018), the goal of this study was to extend previous research on women's marital power in Egypt by exploring the association between patrilineal fertility and women's power in three decision-making domains: financial, daily, and child-related decisions. I also considered the possibility that women's absolute and relative education and employment moderate the relationship between having at least one son and women's household decision-making power. Overall, the results lend support to both resource and gendered-resource theoretical perspectives.

Resource theory posited that women's household decision-making power would increase with their education and employment. In partial support of this theory, women's employment was associated with an increase in women's financial, daily, and child-related decision-making power. Women's absolute level of education had no effect on their household decision-making power, however. Further, the findings provide only limited support for relative resource theory. On the one hand, being relatively better-educated than the spouse was significantly and positively associated with women's child-related decision-making power—a finding consistent with the argument that household decision-making is a result of bargaining processes, whereby women are more likely to participate in household decisions if they have more resources relative to their spouse. On the other hand, I found

that being in a dual-earner family was negatively associated with women's child-related decision-making power.

The findings concur with previous studies that found no association between women's absolute level of education and their household decision-making power in Egypt (Nazier & Ramadan, 2018; Samari & Pebley, 2015). Education has been shown to play an important role in preparing women for home life and ensuring they become devoted housewives and mothers (McDaniel, 1996; Mensch et al., 2003). This means that education can be viewed as a gendered resource for women that is socially permissible on the grounds of domestic betterment. This might also explain why relatively better-educated women can bargain for more power in decisions pertaining to their children, but not daily or financial decisions. That is, a well-educated woman is expected to use her education to the benefit of the family by being involved in the children's upbringing.

The analysis also confirmed that gender expectations take precedence over women's economic resources. Even though women's employment alone affords them greater say in all three decision-making domains, when both spouses are employed, women might choose to preserve their husband's masculinity by participating less in household decisions. This is consistent with the expectation that in patriarchal societies, breadwinning is exclusively reserved for men, which can impede women's economic bargaining power (Shu, Zhu, & Zhang, 2013).

The main findings of this study provided empirical support for the idea that women's patrilineal fertility can enhance women's marital power. The results show that having at least one son is associated with greater financial, daily, and child-related decision-making power. Moreover, the results from the fixed effects models support this conclusion—women who give birth to a son experience an increase in their financial decision-making power. Although the findings lend support to the gendered-resource perspective that a wife's patrilineal fertility elevates her status within the family and can afford her greater say in certain decision-making domains, they should be interpreted with caution. Specifically, the fixed effects estimates of women's patrilineal fertility were small in magnitude and do not consider any unmeasured time-varying variables. Nevertheless, the impact of women's patrilineal fertility on their marital power suggests that future studies should consider the

reproductive outcomes that shape the gendered processes underlying household decision-making.

Although some prior literature has explored how women's fertility shapes their empowerment in the household over time (Samari, 2017a; Salem, 2011), it does not examine the interaction between patrilineal fertility and women's resources. Building on this research, I examined the extent to which women's absolute and relative resources moderate the relationship between having at least one son and women's household decision-making power. Contrary to expectations, the interaction term between household socioeconomic status and having at least one son was not statistically significant. Further, although the results were in the expected direction, the moderation by women's absolute and relative education and employment was not statistically significant. The findings do not support the argument that the importance of women's fertility for their household decision-making power hinges on whether they have other resources to bargain with. Instead, the findings underscore the ongoing significance of traditional gender roles and son preference within marriage and suggest that women's patrilineal fertility matters for women's household decision-making power regardless of individual or relative differences in women's resources.

In conclusion, the results reveal the central role of women's patrilineal fertility for the analysis of women's marital power in the family. By examining women's reproductive outcomes rather than just focusing on their non-economic and economic resources, a deeper understanding of the gendered processes involved in women's household decision-making power can be obtained. As this study demonstrates, patrilineal cultural norms related to women's childbearing govern the availability and distribution of power in various household decision-making domains, irrespective of women's resources.

Several limitations should be noted when interpreting these findings. First, the results are limited by our focus on one dimension of women's empowerment, namely their participation in household decisions. Other key dimensions, such as mobility and the gender distribution of housework, may be differentially linked to women's patrilineal fertility. For instance, patrilineal fertility may increase women's access to the outside world if a son is old enough to function as a chaperone (Robitaille, 2013). Second, I draw conclusions about the

relationship between women's patrilineal fertility on their marital power based on the wife's reports of household decision-making. Thus, I only have access to the women's gendered perceptions of household decision-making, which may not accurately reflect the couple's decision-making process. Third, given the limitations of the data, it was not possible to control for gender ideology. Fourth, the analysis was limited to a period of economic downturn in Egypt, where concerns over family financial security may have exacerbated son preference. If this is the case, the positive relationship between women's patrilineal fertility and household decision-making may be less pronounced in settings typified by greater economic stability and weaker son preference. Future research should aim to extend the generalisability of the findings by considering other societies.

6 Conclusion

Women's educational attainment has increased considerably in Egypt, growing more rapidly than that of men over the past 30 years. Today, the female literacy rate is almost double what it used to be in the early 1990s (Roushdy, Krafft, Harbour, Barsoum, & El-Kogali, 2011). More women than men are attending and completing primary school education, and the number of female university graduates has exceeded the number of men (Elbadawy, 2015; El-Berr, 2004; Ibrahim, 2010). Sociopolitical events such as the Arab Spring have left many families economically vulnerable, making a second income a necessity (El-Mallakh, Maurel, &Speciale, 2018). As a result, more women are taking up informal employment, and some now occupy the role of co-provider (El-Mallakh et al., 2018). However, as the findings reported in this thesis reveal, progress in terms of gender equality, is far from straightforward and it remains incomplete in the Egyptian context. Taken together, the thesis reveals a paradoxical picture of how gender inequality is maintained and reproduced throughout women's lives in modern-day Egypt. In this final concluding chapter, I bring together the findings from all empirical chapters to first consider how this research extends our theoretical and empirical understanding of contemporary gender relations. Building on the findings, I discuss the policy implications of this research and make some policy recommendations to help promulgate gender equality in Egypt. Finally, I outline the limitations of this thesis and make suggestions for future research.

6.1 Theoretical and empirical contributions

This thesis makes several theoretical and empirical contributions to understanding modern-day gender inequalities in Egypt. By focusing on women's resources and cultural norms (and the interaction between these two factors), my contributions result from an examination of three key and interrelated domains of gender inequality, which are: employment stability; intimate partner violence (IPV) against women; and household decision-making. In doing so, the research brings a multidimensional lens to Egyptian women's status in the family and sheds light on how gender inequalities continue to be intergenerationally determined and how they are expressed and negotiated in marriage.

Gender inequality can manifest early on in a woman's life and be sustained throughout the life course. How women experience one life stage or event is contingent on the amount and type of resources they control and the cultural context within which family and work life unfold. In the United States and Western Europe, the relationship between women's empowerment at the early and later stages of the life course is at times portrayed as linear: gender (in)equality that starts in early childhood or adolescence is likely to continue throughout women's lives as they become adults and experience important events such as marriage and childbirth (McGinn, Ruiz Castro, & Lingo, 2019; Anderberg, Rainer, Wadsworth, & Wilson, 2016). My research, however, reveals a different picture of how gender inequality in work and family life is reproduced and maintained in modern-day Egypt. Namely, a picture which is complex and dynamic and that does not necessarily align with the experiences of Western women.

Starting with the mother-daughter relationship, the findings in Chapter 3 are broadly consistent with the view that women's early adolescent experiences in the family are linked to their employment outcomes in adulthood (Ekhaugen, 2009; Haaland, Rege, Telle, & Votruba, 2018; Hendrickx, Bernasco, & De Graaf, 2001). Maternal employment during their daughters' adolescence facilitates women's employment stability. The role of women's education as a mediating mechanism has been previously suggested and theoretically justified in the literature, but not empirically tested in Egypt (Sieverding, 2015). The results show that mothers' employment indirectly shapes their daughters' employment stability through its effects on daughters' education. The remaining direct effect of the mothers' employment during women's adolescence on their subsequent employment stability is attributed to the underlying processes of parental resource transfers and same-sex role models.

However, in Egypt, this intergenerational relationship differs from that described in Western Europe and the United States (Ekhaugen, 2009; Hendrickx, Bernasco, & De Graaf, 2001) in that the relationship appears sector dependent. The employment sector (public or private) matters and makes a difference in whether women benefit from their mothers' employment in the form of more stable and less precarious work. Specifically, maternal public sector employment increases their daughter's employment stability in the public sector, whereas

maternal private sector employment does not appear to influence their daughter's employment stability in the private sector. These results show that the institutional level is important for shaping the opportunities and constraints women face in maintaining stable employment in the Egyptian labour market. Organisational characteristics such as the gender composition of the workforce and workplace culture, such as whether sexual harassment is commonplace, contribute to how the intergenerational reproduction of gender (in)equality in work is playing out in Egypt.

To locate my findings in relation to the context of work in Egypt, the public sector in the country has long been a haven for women seeking socially acceptable work that is easily reconciled with family life. Barriers to stable employment, by comparison, are evident primarily in the private sector and revolve around issues of sexual harassment and the potential for significant work-family conflict. This means that the characteristics of the Egyptian labour market are shaping the nature of this intergenerational relationship, as daughters whose mothers were employed in the public sector stand to gain more in terms of stable employment in that same sector than daughters whose mothers were employed in the private sector. More importantly, the findings from my empirical work suggest that the mechanisms often implicated in the intergenerational reproduction of gender inequality in the labour market in the United States and Western Europe, have often overlooked the role which the employment sector can potentially play in transferring opportunities across generations. The separation of public and private sector employment is a defining characteristic of the Egyptian labour market and allows us to disentangle the effects of different institutional setups on gender inequality in employment outcomes.

Once women's education and employment outcomes are empowered by their mother's employment during women's adolescence, education and better employment outcomes for women are expected to influence their well-being in marriage and minimise their risk of IPV. To test this, the analysis in Chapter 4 focused on whether women's education and employment in Egypt increased or reduced their risk of exposure to physical and psychological IPV in marriage. The empirical analysis generated two key insights. First, women's education and employment are not uniformly associated with their risk of IPV, varying by the type of violence. The predictions of resource theory were supported in the case of physical IPV—women's education and employment offered protection against physical IPV. However, when it comes to their risk for psychological IPV, it does not matter

whether women are educated or employed. These findings align well with the conceptualisation of gender as a social structure. Gender inequality at the interactional level can manifest in the form of violence, including the use of IPV against women. Cultural norms regarding intimate relationships in Egypt are gendered and embedded in a patriarchal system that supports male domination. For women who lack the resources to establish their independence or to exit an unsafe marriage, gender inequality in social interactions can therefore expose them to multiple types of spousal abuse.

Second, the findings in Chapter 4 suggest that gender inequality in marriage, as measured by IPV against women, has neither worsened nor improved since the Arab Spring. Women participated extensively in the protests and were vocal in their demands for equal rights during the Arab Spring (Bargain, Boutin, & Champeaux, 2019). They made some inroads into parliament and, in response to rising commodity prices and declining male incomes, began to take up informal employment (El-Mallakh et al., 2018).

Why, then, has the Arab Spring not had an impact on gender relations in the family, with women's education or employment offering more effective protection against IPV after, as compared to before, the revolution? One likely explanation is that the Arab Spring did not necessarily alter the gender social structure in Egypt. The interdependence between the individual, interactional, and institutional levels mean systemic changes across all three layers are needed to progress gender equality. The necessity of a second income in the aftermath of the Arab Spring drove women into the labour market. However, maintaining high rates of female employment may have been undermined by the institutional arrangements that hindered the achievement of work-family balance, or that created an unsafe work environment for women. This might also explain why the increase in female employment between 2011 and 2013 was short-lived. Similarly, in the family and marriage, legislators focused their attention on preserving patriarchal gender relations. For example, whereas various progressive modifications were made to family law in Tunisia, including the introduction of inter-faith marriage, the parliamentary debate in Egypt revolved around restricting women's divorce rights (Tønnessen, 2013).

In Chapter 5 the analysis shifts the focus from wives to mothers and explores whether women can become 'empowered' in their marital life through the birth of a son. The results

reveal that although women's education, employment and their patrilineal fertility all increase their decision-making power, these variables operate independently of one another. The strength of the relationship between women's patrilineal fertility and their household decision-making power remains unchanged regardless of how well-educated women are, whether they were employed or not, and their household socioeconomic status. These results reflect how cultural norms determine what constitutes a resource, and how these resources operate in empowering women in marriage. I find that in 'doing' gender and giving birth to a son, women fulfil pronatalist norms that encourage motherhood. This, in turn, consolidates women's status in the family and improves their decision-making power.

Taken together, the findings of this thesis encourage us to reflect on Western theorisations of gender and power. The argument that education and employment empower women and are instrumental to gender equality is challenged by the observation that, in Egypt, these resources offer very limited value once women have married. Women's education has increased, offering them more opportunities in the labour market and possibly better prospects for stable employment. At the same time, there is a double bind for women to give birth to sons and to have long-term, stable employment. This arguably represents an important point of tension for women in Egyptian families in the context of high and rising fertility rates. Insofar as cultural expectations of motherhood continue to outweigh education or work, efforts to further gender equality during women's adolescence are going to be short-lived and hard to maintain throughout women's adult lives. Such observations have led scholars to reframe the gender revolution as having "stalled" or become "uneven" (England, 2010). Although the economic necessity of women's employment may have increased, institutional support for women's employment is still lacking. Men still outnumber women in high-paying and stable jobs, and women still do the bulk of housework and childcare. So long as these gendered patterns of family and work life remain, the gender revolution will continue to stall. From a decolonial perspective, the findings highlight the importance of going beyond Eurocentric ways of thinking. By acknowledging that the institutions, culture, and norms found in Egypt differ from those in North America and Western Europe, we can identify new sources of agency or subordination to understand the lived experiences of women in non-Western settings.

To conclude, although the findings reported in my research, seem promising in respect of reducing gender inequality in the family, they also denote the continued intergenerational

reproduction, as well as persistence of gender inequality. In theory, rising levels of female education and employment mean more opportunities to engage with paid work and less time for childrearing. As a result, fertility rates usually tend to decline (Bumpass, 2000; Lesthaeghe, 2010). Yet, despite improvements on both these fronts in Egypt, women's power in marriage remains strongly tied to their patrilineal fertility—women, whether empowered by way of their education or employment, must still give birth to a son.

As stated in the introduction to this concluding chapter, the picture of the reproduction and persistence of gender inequality in women's lives in modern-day Egypt, revealed in this thesis, is one of paradoxical dynamics at play. On the one hand, mothers' employment is important in shaping their daughters' subsequent employment stability and likely contributes to the persistence of gender inequalities in the Egyptian labour market. On the other hand, women still face pressures to become mothers and birth sons as bargaining chips in marriage. Their education and employment as potential sources of empowerment do not appear to alleviate these pressures. Further, they provide only partial protection against IPV—women's education and employment can protect against physical, but not psychological, IPV. Thus, we are seeing a segmented pattern of intergenerational reproduction of gender inequality across women's life courses. Progress made during the early years of women's lives in terms of the positive impact of their mothers' employment on their own prospects of employment stability, can be undone during the later years of their lives through childbearing and patrilineal bargaining.

Applying and reflecting on Risman's (2004) multilevel gender perspective, the thesis illustrates how gender (in)equality in the family in Egypt is influenced by a complex set of gendered processes at the individual, interactional, and institutional levels. The individual level draws attention to the development of gendered selves through childhood socialisation processes. This research focused on parental role models and resources to explore how adolescent women construct their work identities through exposure to their mothers' employment. Women who see their mothers work are more likely to engage in the labour market and obtain more stable employment themselves. At the interactional level, the results reveal how gender inequalities are experienced through social interactions, sometimes in the form of IPV and others in the form of motherhood and women's patrilineal fertility. Finally, at the institutional level, the research shows that the family and labour market setup in Egypt

leads to the marginalisation of female labour as they struggle to find socially acceptable, stable work in the private sector.

6.2 Policy recommendations

Based on these findings, the lack of a coherent and consistent policy framework in Egypt appears to be partly responsible for undermining women's empowerment trajectories. To overcome cultural impediments to change and gender equality much work is needed to ensure that women are supported at all stages of the life course. Having identified some of the contradictory dynamics found in Egyptian families, I now provide some policy reflections and recommendations.

First, it is clear that public- and private-sector differences in the Egyptian labour market are shaping the intergenerational relationship between mothers' employment and their daughters' own adult employment stability. Privatisation is a recent global phenomenon and has come to signify a major shift in public policy (Estrin & Pelletier, 2018). It often involves the outsourcing of public services and the sale of government-owned enterprises (Estrin & Pelletier, 2018). As a result, the role of the state as an institution has weakened and is slowly being replaced by the private sector.

Egypt has deviated from this trend in that, while the public sector is also shrinking, the private sector has seen little growth over the past three decades and is comprised mainly of microenterprises (Assaad, 2014; Barsoum, 2004). This means that the number of available jobs in the labour market is decreasing. Further, there are no clear laws regarding sexual harassment or diversity in the workplace in the private sector (Barsoum, 2004). Thus, there are two potential avenues for policy makers. The first should focus on balancing out the decline in public sector employment with opportunities for private sector employment. Second, increasing private sector employment on its own does not address issues of sexual harassment in the workplace. Providing clear guidelines for private sector conduct, as well as strict enforcement of those guidelines, would ensure that women feel safe enough to take up employment in that sector.

Second, policymakers should provide support to women who are victims of all forms of IPV, particularly those who lack important resources, such as education and employment.

Preventing IPV against women remains a major challenge for policy makers around the world. Within the legal system, definitions of IPV often encompass a narrow range of abusive behaviour. They tend to focus on physical forms of IPV, where the extent of injury is more easily detected and measured. However, efforts specifically designed to recognise and respond to non-physical forms of IPV have recently been made in countries such as the United Kingdom and Australia, with varying rates of success (Barlow, Walklate, Johnson, Humphreys, & Kirby, 2018; Walklate & Fitz-Gibbon, 2019). For example, while broader definitions of IPV, which include non-physical abuse, have led to more reporting of these types of offences, the probability of persecution remains low (Barlow et al., 2018). This stems from issues in identifying and gathering evidence of sustained emotional abuse (Barlow et al., 2018).

Egypt is likely to face similar challenges, as most IPV interventions are in the early stages of development and do not address psychological IPV (Ammar, 2000, 2006). Ensuring a consistent and broad definition of IPV in policy and criminal law is likely to increase community awareness of non-physical forms of IPV as well as women's willingness to report these incidents. Alongside this, investing in the training of social workers and other key service providers may enable them to document and respond to psychological IPV more effectively.

More broadly, policies should be focused on transforming widely held beliefs and expectations that perpetuate gender inequalities in the Egyptian family. Policy reforms aimed at promoting more equitable gender norms will have implications for how roles, resources, and power are distributed between men and women. For example, ensuring compulsory and free education for all can encourage families to educate girls without having to worry about prioritising investments in boys' education. More than 40 years of education reforms in Egypt have been particularly successful on this front—women from all echelons of society have access to education and gender gaps in education have almost disappeared.

Similar reforms should be extended to the labour market. Imposing gender quotas in private sector hiring, for example, can help pave the way for women's employment in a sector that has always been largely inaccessible to them. Further, information on family planning can effect changes in attitudes towards childbearing and encourage women to seek opportunities

beyond marriage and motherhood. Given the important role religion occupies in the lives of most Egyptians, the practice of family planning should be reinforced by religious leaders. This has been effective in the past—religious leaders endorsing contraception can lead to an increase in the rate of contraceptive use among women (Yeatman & Trinitapoli, 2008).

6.3 Limitations and future directions

Although this thesis has addressed a range of important methodological, research and theoretical gaps, a number of limitations are acknowledged, which suggest potential directions for future research. First, this thesis focused on three dimensions of gender inequality. Thus, it provides a glimpse into how gender (in)equality is reproduced throughout women's lifespan but is by no means exhaustive, and the findings may not be directly applicable to other dimensions of gender inequality. Exploring other dimensions of gender inequality, such as workplace gender segregation (Salem & Yount, 2019) or political participation (Stolle & Hooghe, 2011), may reveal more of the mechanisms involved in the reproduction of gender inequality at the work-family interface.

Second, the analysis in all three empirical chapters is based primarily on quantitative research methods and secondary data. Qualitative work based on interviews with women in Egypt was not undertaken. As a result, most of the findings emerging from this study might not capture women's diverse lived experiences. Future mixed-methods research is needed for a more complete understanding of gender inequality and the ways these inequalities are shaped and negotiated within the family. This approach can also help identify how mechanisms at each level interact to contribute to the reproduction of gender (in)equality.

Third, in Chapter 3, I analysed the employment stability of women born in the 1970s to late 1980s, when the employment guarantees were still in place, meaning that their mothers were eligible to benefit from this scheme in the form of more stable employment in the public sector. Thus, these women may have been relatively better positioned in terms of their mothers' public-sector employment than more recent cohorts of women whose mothers no longer have facilitated access to employment in the public sector. This naturally limits the generalisability of the results and suggests that the women first interviewed in the 2006 ELMPS wave and followed and interviewed in 2012 and again in 2018 may be a unique cohort who were particularly advantaged in terms of their employment stability, even though their employment stability could be considered

relatively low. Furthermore, I was unable to fully distinguish between the role of gender-specific role modelling and the role of parental investments in determining women's employment stability. Still, I acknowledge the validity of these theoretical perspectives and conclude that both are key to explaining the positive association between maternal employment and women's employment stability.

Fourth, because the data used in Chapter 4 are cross-sectional, I can only establish statistical associations but not causality. Although I extend the literature on psychological and physical IPV against women in Egypt by addressing the bidirectional relationship between women's employment and IPV using an instrumental-variable approach, I only examine women at discrete time points rather than across the life course. Therefore, it was not possible to compare the same women before and after the Arab Spring.

Furthermore, the DHS data relies on self-reports of IPV. Previous studies have shown that stressful environments and severity of IPV can increase recall bias, with women reporting severe forms of IPV more often than when they perceive IPV to be less severe (Gil-González, Vives-Cases, Ruize, Carrasco-Portiño, & Álvarez-Dardet, 2008; Orcutt, King, & King, 2003). Nevertheless, the DHS represents the most comprehensive and nationally representative data on Egyptian women and has been used extensively to examine IPV against women in this country (Hindin, Kishor, & Ansara, 2008; Yaya, Hudani, Buh, & Bishwajit, 2019).

Lastly, the study lacks dyadic data. The surveys used in the analyses were completed by the female respondents alone. Incorporating information from both partners is needed to assess the couple processes and interactions that help to produce and maintain gender inequalities. This is especially relevant in marriage, which is dyadic by nature. Spouses within the same relationship might have different views about who has the final say on decisions at home or what might constitute violence. Thus, the findings would be more meaningful if future research was to include dyadic data.

Future research could extend the present findings in a number of ways. One suggestion is adopting a research strategy that employs both quantitative and qualitative methods. Qualitative data can offer greater insight into gendered processes and can give meaning to

individuals' experiences and their relationships. This approach would be useful for understanding, for example, the specific conditions that lead to IPV against women, or how women's patrilineal fertility impacts their relationship with their spouse and the role that their spouse plays in pressuring them to have a son. While it is common for Western-based studies to complement their quantitative findings using qualitative data, similar efforts in Egypt have been hampered by the lack of qualitative data, particularly in intimate relationships where family privacy is paramount.

Although gender inequalities in Egypt are widespread, there are significant variations across governorates. Thus, there is a need for within-country comparisons of gender inequality in the family. It is likely that cultural norms with regard to women's subordination, and the population composition, in terms of social class, religion, education, and employment, all contribute to generating these differences. Future research into within-country differences in gender inequalities within the family will permit the development of more governorate-tailored policy interventions. This will require larger nationally representative samples of Egyptian households and multilevel data.

Following prior IPV research, I focused on physical and psychological IPV as the most frequently reported forms of violence. Future research could extend this analysis to include sexual forms of violence, which are highly stigmatised and underreported in Egypt (El-Zanaty et al., 2015). Sexual IPV is often harder to detect and prevent than other forms of violence because the law requires proof of violence from multiple eyewitnesses, which is near impossible for victims of sexual IPV. Further, sexual IPV, including marital rape, is not considered a criminal offence (Ammar, 2006). New tools have recently been developed to measure different forms of sexual violence against women. For example, a new sexual experiences questionnaire was developed and successfully tested using a sample of female college students in Jordan (Spencer et al., 2021). Examining risk factors associated with sexual IPV can therefore bring much-needed light to this issue and more successfully reduce this type of IPV against women.

Due to data limitations, I was unable to control for women's gender ideology. Scholars have long emphasised the importance of gender beliefs, alongside access to resources, in shaping women's and men's gender roles (Davis & Greenstein, 2009; Hu & Scott, 2016). These gender beliefs reflect one's level of support for traditional or egalitarian gender roles and

can have implications for the division of household labour, work-family conflict, the desire to marry, and general well-being within marriage (Davis, 2008; Hu & Scott, 2016; Mensch et al., 2003). Large-scale surveys in Egypt have only just begun to collect information on attitudes regarding work and family roles. For instance, questions on who should go to work, who should raise children, who should do the household chores, as well as what makes a good mother and father, were only recently introduced in the 2018 ELMPS. Therefore, future research is needed to understand the ways in which women's gender ideology, resources, and cultural norms interact and influence gender inequality in the family and in marriage in Egypt.

Lastly, from a theoretical standpoint, we need to advance our understanding beyond Western theorisation of gender and power. Gender relations are often conceptualised by Western scholars and evaluated in Western contexts, with scare attention being paid to the abundance of experiences, cultures, and histories of the non-Western world. The findings of this thesis, along with those of similar studies conducted in the Middle East and North Africa, reflect the distinctive elements of the local culture, and suggest that the ways gender is experienced and expressed in the West can differ from their non-Western counterparts. Culturally sensitive theoretical developments in the social sciences are therefore needed to account for these differences.

7 References

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Appendix A
Supplementary results for Chapter 3

A.1 KHB method

One challenge associated with assessing mediation in nonlinear probability models is that change in the regression coefficient of the mediated variable (mother's employment) is affected by the mediator (women's education) and the scaling of the outcome variable (women's employment stability) (Mood, 2010). To address this, the Karlson, Holm and Breen (KHB) approach was used to decompose unadjusted effects into direct and indirect effects in the context of multinomial regressions (Breen et al., 2013; Kohler et al., 2011; Smith et al., 2019). The estimates obtained when women's employment outcomes are regressed on mother's employment (unadjusted) and covariates are compared with the estimates obtained when adjusting for women's education (adjusted). Thus, the KHB method distinguishes between the proportion of the effect of mother's employment on women's employment stability that is mediated by women's education (indirect effect) and the effect of mother's employment after adjusting for women's education (direct effect). The formulae for calculating direct, indirect, and total effects for the multinomial logistic models using the KHB method are:

Eq. 1

$$b_{yx.m} = \frac{\beta_{yx.m}}{\sigma_e}$$

Eq. 2

$$\alpha_{mx} b_{ym.x} = \frac{\alpha_{mx} \times \beta_{ym.x}}{\sigma_e}$$

Eq. 3

$$\frac{\beta_{yx}}{\sigma_e} = \frac{\beta_{yx.m} + \alpha_{mx} \times \beta_{ym.x}}{\sigma_e}$$

Source: Breen, Karlson & Holm (2013).

Where $\beta_{yx.m}$ is the direct mediating effect of women's education (m) on the relationship between mother's employment (x) and women's employment stability (y), σ_e is the scale parameter, α_{mx} is the effect of mother's employment (x) on women's education (m) and $\beta_{ym.x}$ is the effect of mother's employment (x) on the relationship between women's employment stability (y) and women's education (m).

Table A.1 Generalised ordered logistic regression odds ratios predicting women's education and employment stability

Sensitivity analysis for results displayed in Ch. 3, Figure 3.2	Full sample		Women's public sector employment		Women's private sector employment	
	Education	Employment stability	Education	Employment stability	Education	Employment stability
	Model 1A OR (SE)	Model 1B OR (SE)	Model 2A OR (SE)	Model 2B OR (SE)	Model 3A OR (SE)	Model 3B OR (SE)
Education (ref: < vocational secondary) at T_1						
Vocational secondary		1.60†		3.07***[c]		1.02
		(0.42)		(1.03)		(0.31)
University and postgraduate		4.09***		7.15***[c]		1.39
		(0.72)		(1.43)		(0.32)
Mother's employment (ref: unemployed) at T_1						
Employed	1.15	2.22***				
	(0.19)	(0.25)				
Mother's employment sector (ref: unemployed) at T_1						
Employed (public)			1.83*	3.26***[b]	1.65	1.01
			(0.49)	(0.95)	(0.55)	(0.40)
Employed (private)			0.84[b]	1.34	0.49*	2.56***
			(0.22)	(0.36)	(0.15)	(0.33)
Father's employment (ref: unemployed)	0.72	0.81	0.85	1.55	0.77	0.67
	(0.30)	(0.29)	(0.36)	(0.97)	(0.33)	(0.25)
Covariates						
Mother's education (ref: illiterate) at T_1						
< than vocational secondary	2.12***	1.01	2.11***	1.19	1.89**	0.93*
	(0.43)	(0.18)	(0.45)	(0.30)	(0.45)	(0.18)
> than vocational secondary	5.13***	1.25	5.11***	0.70	4.70***	2.14
	(1.14)	(0.27)	(1.11)	(0.22)	(1.31)	(0.55)
Father's education (ref: illiterate) at T_1						
< than vocational secondary	1.70**	0.88	1.58**	1.60*	1.69**	0.74**
	(0.32)	(0.09)	(0.31)	(0.31)	(0.37)	(0.08)
> than vocational secondary	4.09***	0.74	3.45***	1.70	3.26***	0.40***
	(0.91)	(0.14)	(0.80)	(0.49)	(0.81)	(0.09)

Birth cohort at T_1	0.84***	0.94***	0.83***	0.85***	0.85***	0.98
	(0.02)	(0.01)	(0.01)	(0.02)	(0.01)	(0.01)
Number of siblings at T_1	0.90**	1.00	0.92	0.95	0.86**	1.01
	(0.03)	(0.01)	(0.03)	(0.04)	(0.04)	(0.03)
Number of siblings at T_1–T_2–T_3 (ref: no change)						
Decreased	0.70	1.24	0.80	1.30	0.88	1.24
	(0.14)	(0.15)	(0.16)	(0.29)	(0.21)	(0.16)
Increased	1.17	1.12	1.23	0.98	1.46	1.21
	(0.21)	(0.12)	(0.24)	(0.20)	(0.30)	(0.14)
Marital status at T_1 (ref: single)						
Married	0.61	0.79	1.77	0.65	0.35	0.66
	(0.27)	(0.20)	(0.69)	(0.21)	(0.19)	(0.20)
Divorced or widowed	0.73	1.11	1.04	0.56	0.26	1.16
	(0.39)	(0.35)	(0.67)	(0.27)	(0.24)	(0.50)
Married at T_1–T_2–T_3 (ref: no)						
Married	0.80	0.87	1.83	1.05	0.55	0.74
	(0.33)	(0.20)	(0.75)	(0.35)	(0.27)	(0.20)
Divorced or widowed at T_1–T_2–T_3 (ref: no)						
Divorced or widowed	0.19**	1.79**	0.26***	1.94*	0.16	1.75*
	(0.11)	(0.35)	(0.09)	(0.52)	(0.12)	(0.40)
Number of children at T_1	0.51***	1.08	0.53***	0.79*	0.55***	1.20***
	(0.04)	(0.05)	(0.05)	(0.07)	(0.05)	(0.06)
Children's age at T_1 (ref: no children)						
0–2	1.73**	0.66*	1.19	0.86	1.72	0.65*
	(0.48)	(0.12)	(0.34)	(0.26)	(0.60)	(0.13)
3–5	1.27	0.60**	0.83	0.83	1.54	0.57*
	(0.38)	(0.12)	(0.25)	(0.26)	(0.58)	(0.12)
6–9	0.62	0.47**	0.40*	0.59	0.77	0.45*
	(0.24)	(0.12)	(0.16)	(0.25)	(0.38)	(0.12)
10 +	0.17**	0.41**	0.12**	0.25	0.29†	0.49*
	(0.14)	(0.14)	(0.09)	(0.21)	(0.24)	(0.17)
Number of children at T_1–T_2–T_3 (ref: no change)						
Decreased	0.67	1.13	0.70	0.82	0.88	1.14
	(0.40)	(0.24)	(0.42)	(0.44)	(0.59)	(0.27)
Increased	1.62*	1.02	1.28	1.61**	1.94*	0.84
	(0.40)	(0.12)	(0.29)	(0.37)	(0.56)	(0.10)

Urban at T_1 (ref: rural)	2.02***	0.67*	1.67**	0.89	2.31***	0.63**
	(0.31)	(0.06)	(0.27)	(0.15)	(0.43)	(0.06)
N observations (women)	3,345	3,345	2,483	2,483	3,010	3,010

Note. OR = odds ratio. SE = standard error. Ref = reference. T_1 = 2006, T_2 = 2012 and T_3 = 2018. < = less than, > = greater than. [a] Wald test difference at $p < .05$, [b] Wald test difference at $p < .01$, [c] Wald test difference at $p < .001$. Estimates are weighted. *$p < .05$. **$p < .01$. ***$p < .001$ † $p < .10$ (two-tailed).

A.2 Sensitivity analyses

A.2.1 Analysis excluding women whose (1) marital status, (2) number of children, and (3) number of siblings fluctuated between T1–T3

Table A.2 Generalised ordered logistic regression odds ratios predicting women's education and employment stability: excluding women whose (1) marital status, (2) number of children, and (3) number of siblings fluctuated between T1 – T3

Sensitivity analysis for results displayed in Ch. 3, Figure 3.2	Full sample		Women's public sector employment		Women's private sector employment	
	Education	Employment stability	Education	Employment stability	Education	Employment stability
Variable	Model 1A OR (SE)	Model 1B OR (SE)	Model 2A OR (SE)	Model 2B OR (SE)	Model 3A OR (SE)	Model 3B OR (SE)
Education (ref: < vocational secondary) at T_1						
Vocational secondary		1.10		2.70**		0.70
		(0.32)		(0.94)		(0.11)
University and postgraduate		3.02***		7.21***		1.12
		(0.22)		(1.54)		(0.23)
Mother's employment (ref: unemployed) at T_1						
Employed	1.15	1.88***				
	(0.10)	(0.10)				
Mother's employment sector (ref: unemployed) at T_1						
Employed (public)			2.12*	3.62***	1.52	1.53
			(0.64)	(1.10)	(0.51)	(0.59)
Employed (private)			1.22	1.81*	0.58†	1.92***
			(0.42)	(0.51)	(0.19)	(0.23)
Father's employment (ref: unemployed)	0.44	0.89	0.61	1.42	0.49	0.82
	(0.17)	(0.23)	(0.30)	(0.83)	(0.14)	(0.32)
Covariates						
Mother's education (ref: illiterate) at T_1						
< than vocational secondary	1.72***	0.77	1.64*	1.14	1.66*	0.77*
	(0.38)	(0.12)	(0.38)	(0.25)	(0.39)	(0.09)
> than vocational secondary	4.78***	1.01	4.15***	0.74	4.05***	1.17

	(1.03)	(0.22)	(0.97)	(0.22)	(1.11)	(0.28)
Father's education (ref: illiterate) at T_1						
< than vocational secondary	1.81**	0.92	1.54*	1.32	1.90**	0.86
	(0.32)	(0.08)	(0.33)	(0.26)	(0.39)	(0.08)
> than vocational secondary	4.51***	0.76	3.73***	1.33	3.84***	0.52***
	(1.00)	(0.13)	(0.97)	(0.37)	(0.96)	(0.10)
Birth cohort at T_1	0.84***	0.96***	0.83***	0.86***	0.84***	0.98
	(0.02)	(0.01)	(0.01)	(0.02)	(0.01)	(0.01)
Number of siblings at T_1	0.90**	1.02	0.96	0.98	0.86***	1.02
	(0.03)	(0.01)	(0.04)	(0.04)	(0.03)	(0.02)
Number of siblings at T_1–T_3 (ref: no change)						
Decreased	0.75	1.16	0.79	1.02	0.86	1.21†
	(0.15)	(0.12)	(0.18)	(0.21)	(0.20)	(0.13)
Increased	1.02	0.94	1.07	0.91	1.18	0.96
	(0.18)	(0.08)	(0.22)	(0.18)	(0.23)	(0.09)
Marital status at T_1 (ref: single)						
Married	1.40	0.97	3.94**	0.51	1.06	0.90
	(0.57)	(0.23)	(1.84)	(0.18)	(0.55)	(0.24)
Divorced or widowed	0.89	1.01	1.63	0.50	0.37	0.95
	(0.50)	(0.29)	(1.41)	(0.24)	(0.35)	(0.34)
Marital status between T_1–T_3 (ref: no)						
Married	1.96	0.83	3.95**	0.74	1.72	0.80
	(0.78)	(0.17)	(1.89)	(0.26)	(0.80)	(0.19)
Divorced or widowed	0.14***	1.42	0.27**	1.90*	0.09**	1.42
	(0.08)	(0.26)	(0.11)	(0.56)	(0.08)	(0.31)
Number of children at T_1	0.73**	1.16**	0.88	1.02	0.70*	1.23***
	(0.08)	(0.06)	(0.12)	(0.15)	(0.09)	(0.07)
Children's age at T_1 (ref: no children)						
0–2	1.19	0.59**	0.61	0.72	1.43	0.60**
	(0.35)	(0.10)	(0.21)	(0.25)	(0.51)	(0.12)
3–5	0.99	0.63*	0.59	0.62	1.04	0.62**
	(0.31)	(0.11)	(0.21)	(0.23)	(0.42)	(0.11)
6–10	0.49	0.67*	0.18***	0.88	0.73	0.63*
	(0.19)	(0.14)	(0.09)	(0.42)	(0.34)	(0.15)
11 +	0.16***	0.55*	0.07***	0.59	0.22*	0.55*
	(0.09)	(0.16)	(0.04)	(0.37)	(0.15)	(0.18)

Number of children at T_1–T_3 (ref: no change)						
Decreased	0.71	1.09	0.71	1.38	0.76	1.12
	(0.38)	(0.17)	(0.42)	(0.88)	(0.49)	(0.19)
Increased	1.31*	1.09	1.05	2.13***	1.39	1.02
	(0.30)	(0.11)	(0.28)	(0.45)	(0.37)	(0.11)
Urban at T_1 (ref: rural)	2.13***	0.23*	1.23	0.36**	2.23**	0.19***
	(0.32)	(0.02)	(0.24)	(0.06)	(0.39)	(0.01)
N observations (women)	3,345	3,345	2,483	2,483	3,010	3,010

Note. OR = odds ratio. SE = standard error. Ref = reference. T_1 = 2006, T_2 = 2012, and T_3 = 2018. < = less than, > = greater than. [a] Wald test difference at $p < .05$, [b] Wald test difference at $p < .01$, [c] Wald test difference at $p < .001$. Estimates are weighted. *$p < .05$. **p < .01. ***$p < .001$ † $p < .10$ (two-tailed).

A.2.2 Analysis excluding women who switched between the public and private sector.

Table A.3 Generalised ordered logistic regression odds ratios predicting women's education and employment stability: excluding women who switched between the public and private sector.

Sensitivity analysis for results displayed in Ch. 3, Figure 3.2	Women's public sector employment		Women's private sector employment	
	Education Model 2A OR (SE)	Employment stability Model 2B OR (SE)	Education Model 3A OR (SE)	Employment stability Model 3B OR (SE)
Education (ref: < vocational secondary) at T_1				
Vocational secondary		2.50**		0.54
		(0.69)		(0.12)
University and postgraduate		7.81***		0.99
		(1.62)		(0.33)
Mother's employment (ref: unemployed) at T_1				
Employed				
Mother's employment sector (ref: unemployed) at T_1				
Employed (public)	2.34**	4.43***	1.68	1.50
	(0.55)	(1.41)	(0.58)	(0.52)
Employed (private)	1.32	1.76*	0.42†	1.99***
	(0.33)	(0.43)	(0.19)	(0.22)
Father's employment (ref: unemployed)	0.93	1.90	0.67	0.90
	(0.32)	(1.23)	(0.22)	(0.22)
Covariates				
Mother's education (ref: illiterate) at T_1				
< than vocational secondary	1.57*	1.07	1.60*	0.67*
	(0.22)	(0.29)	(0.42)	(0.11)
> than vocational secondary	4.43***	0.55	4.06***	1.11*
	(1.09)	(0.17)	(1.20)	(0.28)
Father's education (ref: illiterate) at T_1				
< than vocational secondary	1.44*	1.32	1.62*	0.84
	(0.32)	(0.28)	(0.35)	(0.08)
> than vocational secondary	3.29***	1.62	3.08***	0.48***
	(0.88)	(0.46)	(0.78)	(0.09)

Birth cohort at T_1	0.84***	0.84***	0.85***	0.98
	(0.01)	(0.02)	(0.02)	(0.01)
Number of siblings at T_1	0.97	0.96	0.87**	1.02
	(0.04)	(0.05)	(0.04)	(0.02)
Number of siblings at T_1–T_3 (ref: no change)				
Decreased	0.79	0.98	0.86	1.22†
	(0.18)	(0.22)	(0.21)	(0.14)
Increased	1.09	0.86	1.33	0.99
	(0.22)	(0.20)	(0.28)	(0.09)
Marital status at T_1 (ref: single)				
Married	2.53*	0.67	0.47	1.07
	(1.13)	(0.24)	(0.27)	(0.24)
Divorced or widowed	1.41	0.57	0.25	1.10
	(1.13)	(0.30)	(0.25)	(0.42)
Marital status between T_1–T_3 (ref: no)				
Married	2.47*	0.88	0.87	0.86
	(1.16)	(0.30)	(0.42)	(0.22)
Divorced or widowed	0.38*	1.61	0.33*	1.36
	(0.19)	(0.48)	(0.16)	(0.31)
Number of children at T_1	0.91	0.91	0.74*	1.24***
	(0.13)	(0.15)	(0.11)	(0.07)
Children's age at T_1 (ref: no children)				
0–2	0.59	0.68	1.54	0.58**
	(0.18)	(0.24)	(0.59)	(0.11)
3–5	0.54	0.66	1.12	0.60**
	(0.20)	(0.25)	(0.48)	(0.12)
6–10	0.18**	0.98	0.90	0.61*
	(0.08)	(0.50)	(0.45)	(0.15)
11 +	0.08***	0.60	0.31†	0.51*
	(0.05)	(0.40)	(0.22)	(0.17)
Number of children at T_1–T_3 (ref: no change)				
Decreased	0.83	0.95	0.93	1.07
	(0.50)	(0.72)	(0.60)	(0.18)
Increased	1.27	2.24***	1.91*	0.93
	(0.34)	(0.50)	(0.56)	(0.11)
Urban at T_1 (ref: rural)	1.28	0.35***	2.48***	0.18*

	(0.25)	(0.06)	(0.45)	(0.02)
N observations (women)	2,483	2,483	3,010	3,010

Note. OR = odds ratio. SE = standard error. Ref = reference. T_1 = 2006, T_2 = 2012 and T_3 = 2018. < = less than, > = greater than. [a] Wald test difference at $p < .05$, [b] Wald test difference at $p < .01$, [c] Wald test difference at $p < .001$. Estimates are weighted. *$p < .05$. **$p < .01$. ***$p < .001$ † $p < .10$ (two-tailed).

A.2.3 Analysis using the extended definition of employment.

Table A.4 Generalised ordered logistic regression odds ratios predicting women's education and employment stability: using the extended definition of employment.

Sensitivity analysis for results displayed in Ch. 3, Figure 3.2	**Full sample**	
	Education Model 1A OR (SE)	**Employment stability Model 1B OR (SE)**
Education (ref: < vocational secondary) at T_1		
Vocational secondary		1.09
		(0.21)
University and postgraduate		3.10***
		(0.22)
Mother's employment (ref: unemployed) at T_1		
Employed	1.14	1.96***
	(0.20)	(0.21)
Mother's employment sector (ref: unemployed) at T_1		
Employed (public)		
Employed (private)		
Father's employment (ref: unemployed)	0.61	0.90
	(0.27)	(0.18)
Covariates		
Mother's education (ref: illiterate) at T_1		
< than vocational secondary	1.89**	0.76
	(0.40)	(0.12)
> than vocational secondary	4.68***	1.01
	(1.05)	(0.21)
Father's education (ref: illiterate) at T_1		
< than vocational secondary	1.99**	0.90
	(0.31)	(0.08)
> than vocational secondary	4.32***	0.75
	(0.95)	(0.13)
Birth cohort at T_1	0.84***	0.96***

	(0.02)	(0.01)
Number of siblings at T_1	0.90**	1.02
	(0.03)	(0.02)
Number of siblings at T_1–T_3 (ref: no change)		
Decreased	0.72	1.16
	(0.15)	(0.12)
Increased	1.07	0.98
	(0.19)	(0.08)
Marital status at T_1 (ref: single)		
Married	0.85	1.06
	(0.38)	(0.26)
Divorced or widowed	0.72	1.07
	(0.40)	(0.31)
Marital status between T_1–T_3 (ref: no)		
Married	1.24	0.91
	(0.52)	(0.19)
Divorced or widowed	0.72	1.34
	(0.40)	(0.24)
Number of children at T_1	0.75*	1.15**
	(0.09)	(0.06)
Children's age at T_1 (ref: no children)		
0–2	1.17	0.59**
	(0.35)	(0.11)
3–5	0.97	0.63**
	(0.31)	(0.11)
6–10	0.52	0.65
	(0.20)	(0.14)
11 +	0.18***	0.52*
	(0.10)	(0.15)
Number of children at T_1–T_3 (ref: no change)		
Decreased	0.77	1.07
	(0.41)	(0.17)
Increased	1.64*	1.06
	(0.41)	(0.11)
Urban at T_1 (ref: rural)	2.21*	0.22***
	(0.33)	(0.02)

N observations (women)	3,345	3,345

Note. OR = odds ratio. SE = standard error. Ref = reference. T_1 = 2006, T_2 = 2012, and T_3 = 2018. < = less than, > = greater than. [a] Wald test difference at $p < .05$, [b] Wald test difference at $p < .01$, [c] Wald test difference at $p < .001$. Estimates are weighted. *$p < .05$. **$p < .01$. ***$p < .001$ † $p < .10$ (two-tailed).

A.2.4 Analysis including women who were either employed in (1) T_1 and T_3, (2) T_1 and T_2, or (3) T_2 and T_3

Table A.5 Generalised ordered logistic regression odds ratios predicting women's education and employment stability: including women who were either employed in (1) T1 and T3, (2) T1 and T2, or (3) T2 and T3.

Sensitivity analysis for results displayed in Ch. 3, Figure 3.2	**Full sample**	
	Two-period employed: T_1 and T_3	
	Education Model 1A OR (SE)	**Employment stability Model 1B OR (SE)**
Education (ref: < vocational secondary) at T_1		
Vocational secondary		1.02
		(0.20)
University and postgraduate		2.44***
		(0.32)
Mother's employment (ref: unemployed) at T_1		
Employed	1.10	2.22***
	(0.32)	(0.34)
Mother's employment sector (ref: unemployed) at T_1		
Employed (public)		
Employed (private)		
Father's employment (ref: unemployed)	0.75	0.89
	(0.12)	(0.34)
	Two-period employed: T_1 and T_2	
	Education Model 1A OR (SE)	**Employment stability Model 1B OR (SE)**
Education (ref: < vocational secondary) at T_1		
Vocational secondary		1.01
		(0.22)
University and postgraduate		2.80***
		(0.50)

Mother's employment (ref: unemployed) at T_1		
Employed	1.19	2.17***
	(0.22)	(0.36)
Mother's employment sector (ref: unemployed) at T_1		
Employed (public)		
Employed (private)		
Father's employment (ref: unemployed)	0.52	0.89
	(0.26)	(0.33)
	Two-period employed: T_2 and T_3	
	Education	**Employment stability**
	Model 1A	**Model 1B**
	OR (SE)	**OR (SE)**
Education (ref: < vocational secondary) at T_1		
Vocational secondary		1.32
		(0.26)
University and postgraduate		3.21***
		(0.54)
Mother's employment (ref: unemployed) at T_1		
Employed	1.22	2.08***
	(0.24)	(0.29)
Mother's employment sector (ref: unemployed) at T_1		
Employed (public)		
Employed (private)		
Father's employment (ref: unemployed)	0.66	0.98
	(0.36)	(0.23)

Note. Models include all covariates shown in Table A.1. Less than vocational secondary is the reference group. Each woman observed three times. *$p < .05$. **$p < .01$. ***$p < .001$ † $p < .10$ (two-tailed).

Appendix B
Supplementary results for Chapter 4

B.1 Legal response to intimate partner violence against women in Egypt

In Egypt, intimate partner violence (IPV) against women is still a cultural taboo. Over the past decade, the abuse and oppression of women has gradually been identified as a cause for social concern by nongovernmental organisations and government officials. This has resulted in some changes to legislation focused on expanding women's rights, such as the ability to obtain a no-fault divorce (*khul*), collect court-ordered alimony, and extend legal custody of children until the age of 15 (Al-Sharmani, 2010). By contrast, while violence resulting in outwardly visible injuries is considered a felony under Egyptian law, IPV against women is not criminalised (Ammar, 2006). In the absence of visible bruising or skin trauma, the impact of IPV on women is regarded as not 'severe enough' to warrant intervention. This legal interpretation is further complicated by socioeconomic status. Rural poor women must evidence more severe harm compared with their richer urban counterparts (Ammar, 2006). This is based on the judicial assumption that the poor are accustomed to harsher treatment and, therefore, can endure more extreme forms of maltreatment.

The preservation of marriage and family relations still dominates in the assessment of court cases involving IPV against women. Cultural norms that favour family privacy and cohesion over women's well-being have meant that judges regularly suspend legal proceedings to encourage spousal reconciliation (Ammar, 2006). In addition, reluctance in addressing IPV against women are often defended on the grounds of Shari'a (Islamic Law) regarding the permissibility of violence. Specifically, Article 60 of the Egyptian Penal Law states that "the provisions of the Penal Code shall not apply to any deed committed in good faith, pursuant to a right determined by virtue of the Shari'a". That is, the use of IPV against women who fail to uphold their religious duty is seen as just and warranted. Thus, the difficulty of receiving legal support means that female victims

of IPV are unlikely to report the violence, especially in the case of psychological IPV where injuries may be less observable.

B.2 Two-stage least-squares equations

As explained in the main body of the paper, a two-stage least squares (2SLS) estimation method is applied to address issues of omitted variable bias and bidirectional correlation. The 2SLS model consists of two linear regression estimates as specified in equations (1) and (2). The first-stage regression is defined by:

$$\boldsymbol{WEM = \beta 0 + \beta 1 Res + \beta 2 Gov + \beta 3 COV + u} \quad \textbf{(1)}$$

where the endogenous variable, women's employment (WEM), is predicted by the instruments, the number of residents (Res), the governorate average of women's employment (Gov) and exogenous variables (COV). In the second-stage equation, women's intimate partner violence risk (IPV) is regressed on the predicted values of women's employment ($\widehat{WEM}$) from the first stage and all other exogenous variables (COV):

$$IPV = \beta 0 + \beta 1 \widehat{WEM} + \beta 2 COV + u \quad \textbf{(2)}$$

B.3 Additional information on the instrumental variables

The 2005 and 2014 Egypt Demographic and Health Survey (EDHS) collected data on the number of usual residents and visitors in a household. All usual residents and visitors are listed on the household schedule. The EDHS define a household as a group of individuals who live, sleep, and eat together, irrespective of whether they are related or not (ICF International, 2020). A usual resident of a household is any individual who normally lives in the household. A visitor is someone who slept in the household the night before the interview but lives somewhere else. For example, a domestic worker who normally lives and sleeps in the household would be recorded as a usual resident and listed in the household schedule. Similarly, an individual who slept in the household the night before but does not normally live there would be recorded as a visitor and listed in the household schedule. By contrast, an individual who does not usually live in the household and did not sleep there the previous night would be omitted from the household schedule. The usual residents of the household can be identified using the resident variable, which is also available in the EDHS.

There are a few additional reasons why the number of usual residents is a plausible instrumental variable for women's employment. Previous research has identified a link between living arrangements and constraints to women's labour market participation (Shen, Yan, & Zeng, 2016). In Arab countries such as Egypt, where traditional patriarchal values and practices are widespread, household units consisting of in-laws, parents, children, aunts, uncles, and cousins remain common. The availability of other household members may function as either a source of support or an added care burden. If members help with chores and childcare, then the time women devote to the household can decrease (Shen et al., 2016). This may help women overcome domestic work barriers to paid employment. Unlike Western societies, where nursing homes are a viable care option, in Egypt, long-term care facilities are scarce and viewed as culturally unacceptable (Yount, 2005b). This means that the social obligation for elderly care falls entirely on families (Yount, 2005b). As the number of household members in need of care increases, this may place greater demands on women and reduce their ability to engage in employment.

B.4 Definitions of key terms

The main text includes subject and country-specific terminology. In this Appendix, I follow the order in which the terms appear in the main text and provide more details about their meaning.

D1. Introduction

"I explore these relationships in the context of the events that took place during the **Arab Spring**" refers to a series of protests that took place in the Arab world between 2010-2011.

D2. Social and economic changes in Egypt before and after the Arab Spring

"The prevalence of physical and psychological violence in Egypt among **ever-married women** is reported" refers to women who were married at least once before, regardless of their current marital status.

D3. Data and sample

"The sample was stratified by six main regions: urban **governorates**, urban Lower Egypt, rural Lower Egypt, urban Upper Egypt, rural Upper Egypt and the Frontier **governorates**" refers to an administrative division. Egypt has 27 governorates: Cairo, Alexandria, Port Said, Suez, Damietta, Dakahlia, Sharqia, Al Qalyubia, Kafr El-Sheikh, Gharbia, Menoufia, El Beheira, Ismailia, Giza, Beni Suef, Faiyum, Minya, Assiut, Sohag, Qena, Luxor, Aswan, Matrouh, New Valley, North Sinai, South Sinai, and Red Sea.

B.5 First-stage estimates of the effects of the number of household residents and the governorate average of female employment on women's employment.

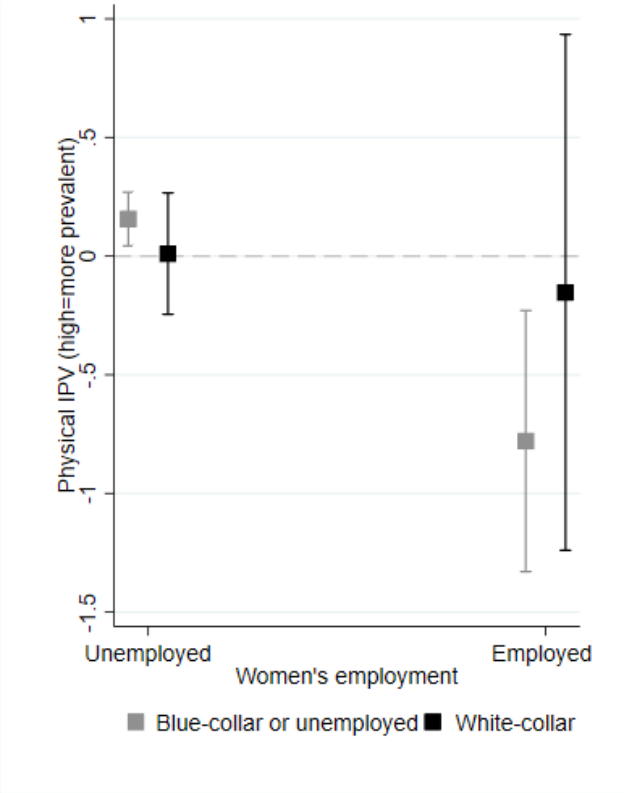
Table B.1 First-stage estimates of the effects of the number of household residents and the governorate average of female employment on women's employment. (*N* = 11,319)

	Women's employment
	B (SE)
Residents	–.01*
	(.00)
Governorate average	1.14***
	(.25)
White-collar worker (ref: blue collar & unemployed)	.02***
	(.01)
Relative education (ref: H = W)	
W > H	–.03***
	(.01)
H > W	–.01
	(.01)
Educational distance	–.01
	(.01)
Women's education (ref: none)	
Primary	.01
	(.02)
Secondary	.03*
	(.01)
Higher	.27***
	(.02)
All other covariates	✓
Intercept	–.35***
	(.05)

Note. H = W = both spouses educated to the same level. W > H = wife is better educated. H > W = husband is better educated. Weighted statistics with unweighted sample size.
† $p < .10$; * $p < .05$; ** $p < .01$; *** $p < .001$ (two-tailed tests)

B.6 Predictive margins of the interaction effect between spouses' employment status and women's employment status (*N* = 11,319).

Figure B.1 Predictive margins of the interaction effect between spouses' employment status and women's employment status (*N* = 11,319).



Note. *N* = 11,319 women. Predictive margins of the interaction effect between spouses' employment status and women's employment status.

B.7 Sensitivity analyses

B.7.1 Two-stage least squares regression models predicting lifetime psychological (panel A) and physical (panel B) IPV (*N* = 11,319)

Table B.2 Two-stage least squares regression models predicting lifetime psychological (panel A) and physical (panel B) IPV (*N* = 11,319)

Sensitivity analysis for results displayed in Ch. 4, Table 4.2	Psychological			Physical		
	Model 1A B(SE)	**Model 1B B(SE)**	**Model 1C B (SE)**	**Model 2A B(SE)**	**Model 2B B(SE)**	**Model 2C B(SE)**
Women's employment (ref: unemployed)	0.36			–0.42*		
	(0.48)			(0.43)		
Employed × Blue-collar and unemployed		0.45			–0.49*	
		(0.57)			(0.45)	
Employed × White-collar		0.01			–0.21	
		(0.50)			(0.59)	
Employed × 2005			0.30			–0.50†
			(0.50)			(0.43)
Employed × 2014			0.32			–0.40
			(0.76)			(0.71)
White-collar worker (ref: blue-collar & unemployed)	–0.09	–0.02	–0.09	–0.07	–0.12	–0.07
	(0.04)	(0.11)	(0.05)	(0.04)	(0.09)	(0.04)
Relative education (ref: H=W)						
W>H	0.11	0.09		0.14*	0.15*	
	(0.06)	(0.06)		(0.05)	(0.05)	
H>W	–0.04	–0.03		–0.09	–0.09	
	(0.06)	(0.05)		(0.06)	(0.06)	
H>W × 2005			–0.03			–0.15
			(0.08)			(0.08)
H>W × 2014			–0.04			–0.01
			(0.07)			(0.07)
W>H × 2005			0.13			0.22*

			(0.08)			(0.09)
W>H × 2014			0.08			0.09
			(0.07)			(0.06)
Educational distance	0.03	0.03	0.03	0.03	0.03	0.03
	(0.07)	(0.07)	(0.07)	(0.06)	(0.06)	(0.06)
Women's education (ref: none)						
Primary	–0.04	–0.04	–0.04	–0.22*	–0.22*	–0.23*
	(0.11)	(0.11)	(0.10)	(0.09)	(0.09)	(0.09)
Secondary	–0.26***	–0.24***	–0.26***	–0.43***	–0.44***	–0.44***
	(0.08)	(0.07)	(0.07)	(0.09)	(0.08)	(0.08)
Higher	–0.49**	–0.42**	–0.47**	–0.62***	–0.66***	–0.61***
	(0.16)	(0.13)	(0.17)	(0.14)	(0.14)	(0.16)
Physically hurt by father or mother (ref: no)	0.40***	0.40***	0.40***	0.74***	0.74***	0.74***
	(0.07)	(0.07)	(0.07)	(0.07)	(0.07)	(0.07)
Husband/other male present for IPV questions	0.07	0.07	0.06	–0.13	–0.13	–0.12
	(0.10)	(0.10)	(0.10)	(0.10)	(0.10)	(0.10)
Wealth quintiles (ref: poorest)						
Poor	–0.07	–0.07	–0.07	–0.05	–0.06	–0.06
	(0.08)	(0.08)	(0.07)	(0.08)	(0.08)	(0.08)
Middle	–0.05	–0.04	–0.05	–0.11	–0.11	–0.10
	(0.08)	(0.09)	(0.08)	(0.07)	(0.07)	(0.07)
Rich	–0.02	–0.02	–0.02	–0.02	–0.03	–0.02
	(0.09)	(0.09)	(0.09)	(0.07)	(0.08)	(0.08)
Richest	–0.21*	–0.20*	–0.21*	–0.22*	–0.22*	–0.21*
	(0.09)	(0.09)	(0.09)	(0.08)	(0.08)	(0.08)
Married more than once (ref: married only once)	0.09	0.09	0.09	0.30*	0.30*	0.30*
	(0.10)	(0.10)	(0.10)	(0.13)	(0.12)	(0.12)
Age at first marriage	–0.02**	–0.02**	–0.02	–0.01*	–0.01*	–0.01*
	(0.01)	(0.00)	(0.01)	(0.00)	(0.01)	(0.01)
Consanguinity (ref: husband non-relative)						
First or second paternal cousin	–0.09	–0.09	–0.09	–0.19***	–0.19***	–0.19***
	(0.06)	(0.06)	(0.06)	(0.05)	(0.05)	(0.05)
First or second maternal cousin	0.12	0.12	0.11	0.02	0.01	0.01
	(0.09)	(0.09)	(0.09)	(0.07)	(0.07)	(0.07)
Other relative by blood or marriage	–0.06	–0.06	–0.06	–0.02	–0.02	–0.02
	(0.06)	(0.06)	(0.06)	(0.07)	(0.07)	(0.07)

Age	–0.00	–0.00	–0.00	0.00	0.00	0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Age gap (ref: –3, –1)						
0	–0.04	–0.02	–0.03	–0.14	–0.15	–0.14
	(0.11)	(0.11)	(0.11)	(0.12)	(0.12)	(0.12)
1, 5	–0.21*	–0.19*	–0.20*	–0.19*	–0.20*	–0.20*
	(0.08)	(0.09)	(0.09)	(0.09)	(0.09)	(0.09)
6, 12	–0.26**	–0.25**	–0.26**	–0.31***	–0.32***	–0.32***
	(0.09)	(0.09)	(0.09)	(0.10)	(0.09)	(0.09)
13, 25	–0.17	–0.16	–0.17*	–0.38***	–0.38***	–0.38***
	(0.11)	(0.11)	(0.11)	(0.11)	(0.11)	(0.11)
Christian (ref: Muslim)	–0.14*	–0.14*	–0.14*	–0.15*	–0.15*	–0.15*
	(0.06)	(0.06)	(0.06)	(0.07)	(0.06)	(0.06)
Urban (ref: rural)	0.18	0.18	0.18	0.12	0.12	0.12
	(0.06)	(0.06)	(0.06)	(0.05)	(0.05)	(0.05)
Region (ref: urban governorates)						
Lower Egypt	–0.04	–0.03	–0.03	–0.02	–0.03	–0.02
	(0.06)	(0.06)	(0.06)	(0.06)	(0.06)	(0.06)
Upper Egypt	–0.02	–0.01	–0.02	–0.04	–0.05	–0.04
	(0.06)	(0.06)	(0.06)	(0.05)	(0.05)	(0.05)
Frontier governorates	–0.07	–0.05	–0.06	–0.24***	–0.26***	–0.24***
	(0.11)	(0.11)	(0.11)	(0.06)	(0.07)	(0.06)
Has at least one child (ref: no children)	0.38***	0.37***	0.37***	0.34***	0.34***	0.34***
	(0.08)	(0.07)	(0.07)	(0.08)	(0.07)	(0.07)
2014 (ref: 2005)	0.05	0.04	0.05	–0.12*	–0.11	–0.15
	(0.05)	(0.05)	(0.13)	(0.05)	(0.06)	(0.12)
Intercept	0.40	0.30	0.40	0.49*	0.55*	0.52*
	(0.25)	(0.25)	(0.28)	(0.23)	(0.25)	(0.26)
Anderson canonical correlation LR test (χ^2)	460.23	214.32	125.65	460.23	214.32	125.65
Cragg-Donald F statistic	235.50	53.53	35.17	235.50	53.53	35.17
Hansen-Sargan (χ^2)	0.85	1.58	3.70	0.30	1.65	2.91

Note. SE = standard error. LR = likelihood ratio. H = W = both spouses educated to the same level. W > H = wife is better educated. H > W = husband is better educated. Reference categories and standard errors are in parentheses. Weighted statistics with unweighted sample size. †$p < .10$ *$p < .05$; **$p < .01$; ***$p < .001$ (two-tailed tests).

B.7.2 Logistic regression models predicting psychological (panel A) and physical (panel B) IPV in the previous 12 months (*N* = 11,319)

Table B.3 Logistic regression models predicting psychological (panel A) and physical (panel B) IPV in the previous 12 months (*N* = 11,319)

Sensitivity analysis for results displayed in Ch. 4, Table 4.2	Psychological			Physical		
	Model 1A OR(SE)	**Model 1B OR(SE)**	**Model 1C OR(SE)**	**Model 2A OR(SE)**	**Model 2B OR(SE)**	**Model 2C OR(SE)**
Women's employment (ref: unemployed)	1.19			0.88†		
	(0.18)			(0.15)		
Employed × Blue-collar and unemployed		1.37			0.84†	
		(0.25)			(0.19)	
Employed × White-collar		0.78			0.99	
		(0.19)			(0.17)	
Employed × 2005			1.09			0.75
			(0.23)			(0.18)
Employed × 2014			1.40			1.16
			(0.27)			(0.19)
White-collar worker (ref: blue-collar & unemployed)	0.87	0.94	0.87	0.99	0.97	0.99
	(0.13)	(0.15)	(0.13)	(0.12)	(0.11)	(0.11)
Relative education (ref: H=W)						
W>H	1.59	1.57		1.32	1.32	
	(0.29)	(0.29)		(0.22)	(0.22)	
H>W	0.83	0.83		0.76	0.76*	
	(0.15)	(0.16)		(0.12)	(0.12)	
H>W × 2005			0.82			0.61*
			(0.22)			(0.12)
H>W × 2014			0.84			1.01
			(0.15)			(0.18)
W>H × 2005			1.68			1.53
			(0.45)			(0.39)

W>H × 2014			1.53			1.20
			(0.33)			(0.21)
Educational distance	0.74	0.75	0.74	1.05	1.05	1.04
	(0.13)	(0.14)	(0.13)	(0.15)	(0.15)	(0.15)
Women's education (ref: none)						
Primary	0.71	0.71	0.71	0.73	0.73	0.71
	(0.14)	(0.14)	(0.14)	(0.17)	(0.17)	(0.16)
Secondary	0.52**	0.52**	0.51***	0.49***	0.48***	0.49***
	(0.10)	(0.11)	(0.11)	(0.10)	(0.10)	(0.10)
Higher	0.23***	0.25***	0.22***	0.22***	0.21***	0.22***
	(0.06)	(0.07)	(0.07)	(0.06)	(0.06)	(0.06)
Physically hurt by father or mother (ref: no)	2.14***	2.13***	2.15***	2.72***	2,72***	2.75***
	(0.33)	(0.33)	(0.33)	(0.23)	(0.35)	(0.34)
Husband/other male present for IPV questions	1.19	1.19	1.19	0.70	0.70	0.72
	(0.18)	(0.31)	(0.31)	(0.18)	(0.18)	(0.17)
Wealth quintiles (ref: poorest)						
Poor	0.86	0.88	0.86	1.03	1.02	1.02
	(0.20)	(0.20)	(0.19)	(0.20)	(0.19)	(0.19)
Middle	0.77	0.78	0.78	0.81	0.81	0.82
	(0.15)	(0.16)	(0.15)	(0.15)	(0.15)	(0.15)
Rich	0.96	0.97	0.96	1.01	1.01	1.02
	(0.22)	(0.22)	(0.22)	(0.18)	(0.17)	(0.18)
Richest	0.64	0.64	0.64	0.70	0.69	0.71
	(0.15)	(0.16)	(0.16)	(0.14)	(0.14)	(0.14)
Married more than once (ref: married only once)	0.86	0.86	0.86	1.45*	1.44*	1.48*
	(0.23)	(0.23)	(0.23)	(0.26)	(0.26)	(0.26)
Age at first marriage	0.99	1.00	0.99	0.99	0.99	0.99
	(0.01)	(0.01)	(0.02)	(0.01)	(0.01)	(0.01)
Consanguinity (ref: husband non-relative)						
First or second paternal cousin	0.84	0.84	0.84	0.91	0.91	0.90
	(0.15)	(0.14)	(0.15)	(0.14)	(0.14)	(0.14)
First or second maternal cousin	1.38	1.39	1.38	1.01	1.01	1.02
	(0.32)	(0.32)	(0.32)	(0.16)	(0.16)	(0.16)
Other relative by blood or marriage	1.02	1.03	1.02	1.02	1.01	1.01
	(0.29)	(0.29)	(0.29)	(0.18)	(0.18)	(0.18)
Age	0.97***	0.97***	0.97***	0.95***	0.95***	0.95***

	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Age gap (ref: [–3, –1])						
[0]	0.94	0.95	0.93	0.72	0.71	0.69
	(0.25)	(0.25)	(0.25)	(0.16)	(0.15)	(0.15)
[1, 5]	0.67	0.68	0.67	0.79	0.79	0.78
	(0.15)	(0.15)	(0.15)	(0.13)	(0.13)	(0.13)
[6, 12]	0.75	0.76	0.75	0.56***	0.56**	0.56*
	(0.16)	(0.16)	(0.16)	(0.10)	(0.10)	(0.10)
[13, 25]	0.81*	0.82	0.80	0.61*	0.60*	0.59*
	(0.23)	(0.24)	(0.23)	(0.14)	(0.14	(0.13)
Christian (ref: Muslim)	0.53*	0.53*	0.52*	0.74	0.74	0.74
	(0.14)	(0.14)	(0.14)	(0.14)	(0.14)	(0.14)
Urban (ref: rural)	1.51	1.52	1.52	1.09	1.09	1.08
	(0.32)	(0.32)	(0.31)	(0.12)	(0.12)	(0.12)
Region (ref: urban governorates)						
Lower Egypt	1.13	1.14	1.13	0.86	0.86	0.87
	(0.22)	(0.22)	(0.22)	(0.13)	(0.13)	(0.13)
Upper Egypt	1.03	1.05	1.03	0.80	0.79	0.79
	(0.20)	(0.20)	(0.20)	(0.12)	(0.12)	(0.12)
Frontier governorates	1.56	1.59	1.56	0.84	0.84	0.85
	(0.66)	(0.67)	(0.66)	(0.23)	(0.23)	(0.23)
Has at least one child (ref: no children)	2.57*	2.56**	2.56**	1.58*	1.60*	1.59*
	(0.94)	(0.94)	(0.94)	(0.35)	(0.35)	(0.34)
2014 (ref: 2005)	0.88	0.88	0.86	0.95	0.95	0.81
	(0.10)	(0.11)	(0.16)	(0.11)	(0.10)	(0.11)
Intercept	0.15*	0.14*	0.16*	0.97	1.00	1.10
	(0.11)	(0.11)	(0.12)	(0.59)	(0.62)	(0.68)

Note. OR = odds ratio. SE = standard error. H = W = both spouses educated to the same level. W > H = wife is better educated. H > W = husband is better educated. Reference categories and standard errors are in parentheses. Weighted statistics with unweighted sample size. †$p < .10$ *$p < .05$; **$p < .01$; ***$p < .001$ (two-tailed tests).

Appendix C
Supplementary results for Chapter 5

C.1 Sensitivity analyses

C.1.1 Random effects models predicting women's marital decision-making power with age at marriage as a categorical variable (*N* = 10,464)

Table C.1 Random effects models predicting women's marital decision-making power with age at marriage as a categorical variable (*N* = 10,464)

Sensitivity analysis for results displayed in Ch. 5, Table 5.2	Financial Model 1A B (SE)	Daily Model 1B B (SE)	Child-related Model 1C B (SE)
Has son/s (ref: no son)	0.08*	0.09**	0.17***
	(0.04)	(0.02)	(0.04)
Has daughter/s (ref: no daughter)	–0.06†	–0.01	0.04
	(0.03)	(0.02)	(0.03)
Education (ref: illiterate)			
Primary education	0.10	0.04	0.07
	(0.05)	(0.05)	(0.05)
Secondary education	0.07	0.05	0.01
	(0.04)	(0.03)	(0.04)
University and postgraduate education	0.06	–0.03	–0.16
	(0.06)	(0.06)	(0.06)
Relative education (ref: H = W)			
W > H	–0.00	0.01	0.08*
	(0.04)	(0.04)	(0.04)
H > W	0.02	0.01	–0.02
	(0.04)	(0.03)	(0.03)

Employed (ref: unemployed)	0.36***	0.18*	0.32***
	(0.09)	(0.08)	(0.09)
Relative employment (ref: male earner)			
Dual earner	–0.18	–0.08	–0.19*
	(0.09)	(0.07)	(0.09)
Neither employed	0.12	0.02	0.04
	(0.07)	(0.06)	(0.07)
Household wealth (ref: poorest)			
Poor	0.03	0.02	–0.01
	(0.04)	(0.03)	(0.05)
Middle	0.04	0.01	0.03
	(0.04)	(0.03)	(0.04)
Rich	0.03	0.00	0.03
	(0.05)	(0.05)	(0.05)
Richest	0.05	0.08	0.02
	(0.05)	(0.04)	(0.05)
Rural residence (ref: urban)	–0.15***	–0.01	–0.13***
	(0.04)	(0.03)	(0.03)
Nuclear household (ref: patrilocal)	0.15**	0.21***	0.23***
	(0.04)	(0.04)	(0.05)
Age	0.01***	0.01***	0.00
	(0.00)	(0.01)	(0.00)
Age at first birth	0.00	–0.02***	–0.01
	(0.01)	(0.01)	(0.01)
Age at marriage (ref: 13–17)			
18–22	0.02	0.02	0.04
	(0.04)	(0.04)	(0.04)
23–26	0.01	0.03	0.09
	(0.06)	(0.05)	(0.06)
27–32	–0.07*	0.05	0.06
	(0.09)	(0.07)	(0.08)
Region (ref: urban Governorates)			
Lower Egypt Governorates	–0.17***	0.08*	–0.06
	(0.05)	(0.04)	(0.04)
Upper Egypt Governorates	–0.55***	–0.49**	0.55**

	(0.05)	(0.04)	(0.03)
Year (ref: T_1)			
T_2	0.02	–0.12***	–0.06
	(0.03)	(0.02)	(0.03)
T_3	0.30***	–0.27***	0.55***
	(0.04)	(0.03)	(0.03)
Intercept	–0.54***	0.18	–0.07
	(0.15)	(0.12)	(0.14)
Sigma U	0.29	0.38	0.36
Sigma E	1.37	1.08	1.31
Rho	0.04	0.11	0.07

Note. SE = standard error. < = less than. > = greater than. W = wife, H = husband. T_1 = 2006, T_2 = 2012, and T_3 = 2018. *p < .05 **p < .01 ***p < .001 †p < .10 (two-tailed).