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Women's Status, Autonomy, and Fertility in Transitional Egypt

A dissertation submitted in partial satisfaction

of the requirements for the degree

Doctor of Philosophy in Public Health

By

Goleen Samari

2015

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ABSTRACT OF THE DISSERTATION

Women's Status, Autonomy, and Fertility in Transitional Egypt

by

Goleen Samari

Doctor of Philosophy in Public Health

University of California, Los Angeles, 2015

Professor Anne R. Pebley, Chair

Among the 22 Arab countries, Egypt ranks amongst the worst for the treatment of women. Additionally, in the last 6 years, fertility surged to a 20-year high of 3.5 births per woman. Poorer women's status and autonomy is often linked to high fertility; however, little is known about the factors that shape women's autonomy and fertility in Egypt. This study evaluates determinants of women's autonomy and the relationship between autonomy and fertility over time in a representative, longitudinal sample of women amidst a context of social transition: Arab Spring Egypt.

Theory suggests that certain life course events, like educational achievement are important in shaping women's status and autonomy. Household and community effects on women's autonomy have yet to receive needed research attention. The research is guided by the theory of gender and power and the life course perspective focusing on important events that shape women's autonomy at multiple levels over the life course. Furthermore, the relationship between women's autonomy and subsequent fertility behaviors is often assumed, but rarely

studied over time. In this study, I look at women's autonomy and fertility over time in Egypt.

Data come from the 2006 and 2012 Egyptian Labor Market Panel Survey (ELMPS), a nationally representative sample of households in Egypt and the 2008 Egyptian Demographic and Health Survey (EDHS). I use multilevel and standard OLS and Logistic regression models to show the relationship between individual, household, and community characteristics and measures of women's autonomy and the relationship between women's autonomy and fertility. Across all autonomy outcomes, region of household and household wealth are consistently associated with women's autonomy. As expected, due to the greater social conservatism in Upper Egypt, the women in rural and urban Upper Egypt have less autonomy as compared to women in the Cairo region. The rural/urban differences in autonomy with women in rural areas being associated with less autonomy are also consistent with work that shows more patriarchal views in rural Egypt.

Results show the importance of women's social context in Egypt in her level of control and ability to exercise autonomy in the household and greater community. Results indicate that women's autonomy was greater in 2012 as compared to 2006, and that after the initial uprisings, women reported more household autonomy. While improvements in autonomy in 2012 could be temporary and the data need to cover a longer period of time to capture social changes, this shows some change in women's status and behavior in the midst of social and political change. Regional variation shows more autonomy in Cairo and less in Upper Egypt. While these improvements could be temporary and the data need to cover a longer period of time, this shows some change in women's status in the midst of social and political change. Contrary to what was expected, more autonomous women have a higher number of births. It may be that more autonomous women fulfilled social expectations of high fertility, although they personally

desired smaller families.

This study makes significant contributions to the research on social and gender dynamics in modern Egypt. Additionally, this research uses a range of measures to operationalize autonomy, recognizing that each captures something different about a woman's household experience. This study is one of the first to describe the household and social determinants of women's autonomy and fertility in a transitional Egypt, specifically for a sample of women across the life course.

The dissertation of Goleen Samari is approved.

Megan M. Sweeney

Linda B. Bourque

Steven P. Wallace

Anne R. Pebley, Committee Chair

University of California, Los Angeles

2015

DEDICATION

For my parents, who lead by example and help me walk my chosen paths.

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Figure 6.1 – Percentages of Births in 2006 and 2012 for Married Women in 2006

Figure 6.2 – Percentages of Births in 2012

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Chapter One: Introduction and Specific Aims

1.1 Introduction

Gender inequality and lower status of women compared to men negatively affects women's reproductive health (Dyson and Moore 1983; Jejeebhoy 1995; Mason 1987; Vlassoff and Garcia Moreno 2002). As a result, women's autonomy, defined as freedom from external control and the ability to make strategic choices, is an important determinant of women's health and well being and, therefore, a focus of global development efforts (Malhotra and Schuler 2005; Rao, Vlassoff and Sarode 2013). Autonomy is associated with lower fertility (Basu 2002; Bloom, Wypij and Gupta 2001; Upadhyay and Karasek 2012), greater birth spacing (Feldman et al. 2009; Upadhyay and Hindin 2005), greater contraceptive use (Do and Kurimoto 2012; Govindasamy and Malhotra 1996), lower ideal family size and fertility preferences (El-Zeini 2008; Hindin 2000; Mason and Smith 2000), lower risk of unintended pregnancy (Lee-Rife 2010), and increased access to maternal health care (Mistry, Galal and Lu 2009). Despite these positive links between autonomy and fertility behavior, the large literature on women's autonomy and fertility shows that the two can be positively or negatively related or not associated at all, depending on the setting, the measure used, and the level of measurement (e.g., individual vs. community) (Upadhyay et al. 2014). These inconsistent findings point to the need to improve our understanding of how to measure women's autonomy and how autonomy is related to other aspects of women's lives.

Very few empirical studies simultaneously examine multiple aspects of women's lives associated with autonomy (Anderson and Eswaran 2009; Kantor 2003; Rahman and Rao 2004). More often, studies are focused on one aspect of women's lives, like participation in economic activities, and how that affects autonomy. Single factors, like increased access to financial resources, have been proven insufficient to promote autonomy (Kantor 2003). Women's

autonomy should be considered within the larger context of women's lives (Moss 2002). While events like educational attainment and marriage change women's autonomy over the life course, women's roles in reproduction and production are simultaneously determined by what occurs within the household and community. Without an understanding of how multiple aspects of women's lives are related to autonomy over time, promotion of autonomy as a pathway for greater health and wellbeing and fertility reduction is difficult and likely to fail.

Theories of how women's household autonomy affects fertility are built around the notion that social institutions of gender, the gender context of the household, including the value given to women's health in fertility decisions, or women's socioeconomic position affects participation in fertility decision-making and fertility rates. More autonomous women might have different fertility desires, be able to assert themselves in fertility decisions, or have competing education and employment obligations. Despite these assumptions about the relationship between autonomy and fertility, specific pathways by which the household environment affects women's autonomy and fertility remain mostly unexplored. Importantly, childbearing can also increase women's autonomy, and cross sectional research does not allow for exploration of the order of events between autonomy and fertility. Women's autonomy is a dynamic process, not static over the life course, and may vary over time due to time-varying characteristics like marital status and fertility. In order to disentangle the direction of the relationship, the research requires measures over time.

There is even less understanding of the relationship between women's autonomy and fertility in Middle Eastern and North African countries. In 2013, the birthrate in Egypt reached a 20-year high at 32 for every 1,000 women of childbearing age with the fertility rate at 3.50 per woman (Central Agency for Population Mobilization and Statistics 2014; Central Intelligence

Agency 2013). There is speculation that this is related to lack of economic opportunities for women and social unrest, including the uprisings that started on January 25, 2011. However, little is known of the actual cause of the increased rate. Egypt is society in political transition. These political transitions have implications for the traditional configuration of gender relations within the society. Transitions are times of political, but also social transformations. Therefore, attention should be paid to their gender-reshaping potential and the capacity to transform gender relations in the household. Egypt in the midst of the Arab Spring offers an opportunity to see women's status in post-conflict periods, if women have gained or lost control, and the implications for fertility. We need to understand how much autonomy women have had in Egyptian households and what impact changes in women's autonomy have on fertility.

Importantly, confusion over the definition and measurement of women's status and autonomy makes it difficult to understand the contribution of each of these constructs in explaining fertility. Problematically, most research that uses autonomy to predict behavior identifies autonomy with relative measures such as earnings, education, or age gaps between husbands and wives. These are indirect measures and they assume unspecified links to female autonomy. Unless autonomy is disentangled from women's status, the pathways between autonomy and fertility will not be understood. By looking at multi level determinants of different dimensions of autonomy over time, further examining the effects of autonomy on fertility and contraceptive use, and understanding how fertility affects future autonomy, this study will contribute to our understanding of this complex relationship. This understanding is crucial to the promotion of household gender equality to facilitate desired demographic outcomes, like fertility reduction.

This dissertation is a three-part study of women's autonomy and fertility in Egypt. The overall goal is to investigate the determinants of autonomy and relationship between autonomy and fertility using longitudinal survey data analysis of two waves (2006, and 2012) of the Egyptian Labor Market Panel Survey (ELMPS) and cross sectional analysis of the 2008 Egyptian Demographic and Health Survey (EDHS). This study will contribute to the literature on women's status, autonomy, and fertility by examining the determinants of autonomy and fertility from a multilevel perspective and across the life course. Using the theory of gender and power and the life course perspective, this study will also examine the mechanisms that link women's status, autonomy, and fertility behavior in Egypt.

1.2 Specific Aims

The overarching research question for this study is: In Egypt, what aspects of women's lives affect women's autonomy and what are the implications for fertility?

1.2a Study Aim #1 – To examine the determinants of women's autonomy.

Past work and theory suggests that certain individual level determinants affect women's autonomy (Bloom et al. 2001; Gupta and Yesudian 2006; Hindin 2000, 2002; Kishor 2000). However, little research shows what household or community determinants affect autonomy, which determinants are most important, and at what level (Acharya et al. 2010; Balk 1994). Most research poorly defines and differentiates between women's status and autonomy. The tendency to use proxy measures of women's status like education and employment to measure autonomy make it difficult to discern what events in the life course affect autonomy (Mason 1986, 1987). The first aim of the dissertation will examine the determinants of women's autonomy in Egypt with two different data sets to compare results across multiple sources.

1.2b Study Aim #2 – To examine the changes and determinants of changes in women's autonomy over the life course.

Most work on women's autonomy does not examine changes in autonomy over time. Women's autonomy is dynamic and can change based on events like getting a new job or marriage. A woman's autonomy at one time is a product of her prior autonomy (Lee-Rife 2010). Cross sectional work does not capture the dynamic nature of autonomy (Malhotra and Mather 1997; Malhotra and Schuler 2005). In Egypt, the impact of life transitions on women's autonomy over time has not been studied. Additionally, while many assert that women's autonomy affects childbearing, no studies consider that childbearing is a transition that occurs during the life course that might also affect future autonomy. If autonomy is dynamic and changes over time based on exposures at the individual, household, and community level, it stands to reason that

fertility would change later in life autonomy. Therefore, the second aim of the dissertation will examine the changes in women's autonomy over time in Egypt and what events in the life course determine those changes.

1.2c Study Aim #3 – To examine the relationship between women's autonomy and fertility over the life course.

Past work shows that women's autonomy affects fertility (Dyson and Moore 1983; Hindin 2000; Mason 1987). However, little research explores that effect over time. One theory about the relationship between women's autonomy and fertility is that the pathway is through contraceptive access and choices. Women with more household autonomy have greater choice in using contraceptives and subsequently lower fertility (Do and Kurimoto 2012; Govindasamy and Malhotra 1996). No studies have looked at the relationship between autonomy and fertility in modern Egypt. The third aim of the proposed study is to examine the effect of autonomy on contraceptive use and fertility among women in Egypt.

1.3 Dissertation Overview

The goal of this dissertation is to explore determinants of women's autonomy and the relationship between autonomy and fertility in Egypt. The main objectives are to examine determinants of autonomy at different points in time, over time, and from multiple data sources, and to examine the relationship between autonomy and fertility longitudinally. The research was conducted as a secondary data analysis of two nationally representative samples of women of reproductive age in Egypt.

Chapter 2 of this dissertation will describe the background and significance, and conceptual framework for the relationship between women's autonomy, carefully defining women's status and autonomy and briefly reviewing the literature on the determinants of autonomy and current status of women in Egypt. Chapter 3 reviews the data – the Egyptian

Labor Market Panel Survey (ELMPS) and the Egyptian Demographic and Health Survey (EDHS), study measures, research design, and analytic methods that will be used to examine and describe the associations.

Chapter 4 presents ELMPS and EDHS results from the multilevel regression models used to identify individual and household determinants of women's autonomy in Egypt in 2006 and 2008. Chapter 5 presents ELMPS results from the multilevel regression models used to identify individual and household determinants of women's autonomy in Egypt in 2012, determinants of changes in women's autonomy from 2006 to 2012, and whether a woman's fertility is associated with autonomy later in life. Chapter 6 presents ELMPS results from multilevel regression models used to determine whether women's autonomy in 2006 is associated with fertility in 2012. This chapter also presents EDHS results from multilevel regression models of autonomy and contraceptive use in 2008. Lastly, Chapter 7 presents the discussion, strengths and limitations, and public health implications of these results.

Chapter Two: Background, Conceptual Framework, and Research Questions

2.1 Overview

The first portion of this chapter outlines the background and significance for the present dissertation, and is divided into five sections: The first section describes the importance of women's autonomy. The second section defines women's status and autonomy, differentiating between two terms that are often used interchangeably. The third section discusses determinants of autonomy. The fourth section provides details on the relationship between autonomy and fertility. The fifth section describes the Egyptian context and autonomy and fertility in Egypt. The second part of the chapter includes a discussion of theory that informs the conceptual framework. The last portion of the chapter includes the research questions and hypotheses that inform this dissertation.

2.2 Women's Autonomy

Throughout the world, women are more likely than men to be socially and economically disadvantaged (Vlassoff and Garcia Moreno 2002). Women and men differ biologically, but also in their access to and control over material, personal, and social resources, and their decision-making power in the family and the community (McDonough and Walters 2001; Ostlin et al. 2006). Promotion of women's status and gender equality is a long-standing goal of the international development organizations (e.g., the World Bank) because it is positively associated with better health for women and children. In 2012, for the first time, the World Bank devoted the World Development Report to the theme of Gender Equality and Development. The report argues that gender equality and public policies that promote gender equity as a means of supporting development and economic growth are essential for global development efforts (World Bank 2012). Women's autonomy is a critical component of this strategy to promote gender equality and equitable treatment and representation of women. Development

organizations view promotion of women's autonomy as a means of ensuring economic growth and promoting women's health and wellbeing.

Inequalities of control and power among men and women in work, family life, or divisions of labor, have direct implications for women's reproductive health and fertility often being associated with poor health outcomes and higher fertility rates (Dyson and Moore 1983; Jejeebhoy 1991, 1995; Mason 1987; Vlassoff and Garcia Moreno 2002). However, little is known about what aspects of women's lives affect their autonomy, what autonomy means within the context of women's lives, and how autonomy affects fertility. Demographic research often focuses on women's status. Some argue that the pathway by which status influences demographic behavior is through personal autonomy. For example, autonomy may be the key pathway by which measures of status, like education, influence fertility (Jejeebhoy 1995; Mason 1987). Whether women's autonomy operates directly and/or indirectly on fertility is just beginning to be explored. Understanding women's experiences of autonomy and its effects is a crucial early step in making advances in gender equity. In order to better understand the relationship between women's status, autonomy, and fertility behavior, this study looks at determinants of women's autonomy over the life course and subsequent demographic behavior, specifically, fertility over time.

2.3 Defining Women's Status and Autonomy

Women's status and autonomy are often lumped together under the umbrella of the term 'empowerment' even though they capture very different aspects of a woman's life. Since empowerment includes all of these terms, it remains abstract and poorly defined and measured, and different scholars use empowerment to mean a range of things related to women's status or autonomy. Most authors argue that empowerment is multi-dimensional (Balk 1994;

Govindasamy and Malhotra 1996; Mason 1986, 1987) implying that it captures a range of things related to women's lives. Additionally, inherently the term empowerment implies that to be empowered one would have needed to be disempowered at some point in the life course. Some women may have power throughout their whole lives thus never undergoing empowerment. Therefore, due to the considerable variation in the definition and subsequent measurement of empowerment (Mosedale 2005), the term's vague attempt to capture many very different components of a woman's life, and empowerment's inability to capture those who were never disempowered, this study strictly focuses on women's status and autonomy to directly and succinctly explain which facets of all women's lives are of importance.

Women's status and autonomy are often used interchangeably despite differences in meaning. Women's status encompasses several socio-demographic variables such as level of education, employment, and whether she works for proper pay (Hindin 2000; Jejeebhoy 1991; Schuler, Hashemi and Riley 1997). Women's status may also include characteristics that represent power differentials such as age and educational differences between a wife and a husband (Beegle, Frankenberg and Thomas 2001). On the other hand, women's autonomy is defined as freedom from external control or influences and the ability to formulate strategic choices and control resources. Autonomy can include things like financial independence or a woman's ability control her own income. Women's autonomy does not imply prestige or position within a social context. It is not necessarily accorded to women like women's status, but reflects personal capacities. Autonomy lies on a continuum from the ability to effectively alter your environment on one end and a sense of passive helplessness at the opposite end. That is, autonomy is opposite to the notion that your actions cannot influence events and circumstances, that fate, chance, or other individuals determine these events.

Women's autonomy is often based on the amount of interpersonal control (Bloom et al. 2001; Dyson and Moore 1983; Jejeebhoy 1991). To have autonomy, women need to have influence over interpersonal issues, and be able to formulate strategic choices, control resources, and participate in decision-making within the family. If we consider what actually enables people to be autonomous, the answer is not isolation, but relationships with others – parents, teachers, friends, family, etc. Social relationships both cause autonomy to develop and restrict its development. Both social and historical conditions, such as oppressive gender socialization, can promote or impede the capacity for autonomy. Control over household decisions, or lack thereof, is an important and more direct measure of women's autonomy within their families. While being able to decide what to cook is not equivalent to having the power to make decisions about children's schooling, health, or marriage, when aggregated with other small decisions may provide useful insights on intra-household decision-making processes (Malhotra 2002). Autonomy develops throughout life on a continuum: gains early in life emerge later as an improved capacity to decide later in life (Gupta 1995). Factors, such as marriage circumstances and family formation, may at times be at odds with gains in autonomy, especially from education or a job, and have to be negotiated with existing social norms.

At least four strategies have been used in the literature to operationalize female autonomy. The first, household decision-making, was one of the earliest used and has formed the basis of many autonomy measures used in surveys (Dyson and Moore 1983). One problem with these measures is that they often aggregate very different types of decisions, e.g., deciding what to cook with making decisions about children's schooling, health, or marriage. However, multiple types of decisions, when aggregated, may provide useful insights on household decision-making processes (Malhotra 2002). A second measure of autonomy, spatial mobility,

arose in studies from South Asia where social norms associated with *purdah* typically prevent women from leaving their homes (Mumtaz and Salway 2009). However, even in these societies, mobility can have different meanings because marginalized women (e.g., the very poor, widows) have to leave home to earn a living. So greater mobility may indicate either greater autonomy or a more marginal status, depending on social class. A third strategy for measuring autonomy is to examine financial control over personal assets (Anderson and Eswaran 2009). Women who have their own personal financial resources and/or a greater say in household finances are often more autonomous in other areas of life (Sabarwal, Santhya and Jejeebhoy 2014). For example, research in Egypt on autonomy and use of contraceptives has found that decision-making, freedom of movement, and control in budgetary decisions are important dimensions of female autonomy (Govindasamy and Malhotra 1996; Rastogi and Nguyen 2005).

A fourth and distinct strategy attempts to use women's socioeconomic status as a proxy for autonomy. For example, studies have used educational attainment, employment, and working for pay as proxies for autonomy (Abadian 1996; Dharmalingam and Morgan 1996; Dyson and Moore 1983; Morgan and Niraula 1995; Woldemicael 2009). Socioeconomic proxies, however, can be conceptually vague, misleading, and can greatly complicate research on socioeconomic determinants of women's autonomy (Balk 1994; Govindasamy and Malhotra 1996; Kabeer 2005; Malhotra and Schuler 2005; Narayan-Parker 2005). Women's education and autonomy can be linked in any number of ways. For example: (a) women and girls with less autonomy may not be allowed to continue in school, (b) school itself encourages autonomy by empowering women with knowledge and self-esteem, and/or (c) richer families are more likely to adopt "western" values and thus, expect women to get more education and encourage them to be more autonomous. Programs seeking to increase women's autonomy would take very different

approaches depending on which of these pathways causally link education and autonomy.

The relevance of education and employment as proxy measures for autonomy may depend on geographic region, the outcome being examined, or the aspects of autonomy that are of interest (Jejeebhoy and Sathar 2001; Malhotra and Mather 1997; Presser and Sen 2000).

Instead of relying on education and employment as proxy measures for autonomy, investigations on the impact of women's autonomy outcomes should use direct measures reflecting women's degree of control in their lives (Balk 1994; Bloom et al. 2001; Jejeebhoy 1991; Malhotra and Schuler 2005). If autonomy is the exercise of control, evidence of autonomy must be sought in terms of women's actual control over various aspects of their lives including marriage, income, decision-making, and freedom of movement.

2.4 Determinants of Women's Autonomy

2.4a Individual Determinants of Women's Autonomy

Women's autonomy is likely to vary with the characteristics at the individual, interpersonal, community, and macro political and societal level. The determinants of women's autonomy can vary considerably based on the timing and events over the life course. For example, the timing of marriage or a young age at marriage can affect women's power within the marital household. In some cases, marriage may free young women from their father's control, but it often is simply a transition into different situations of disadvantage with another male (their husband) and of decreased autonomy as a junior female among the women in the husband's extended family (Kabeer 2005). Additionally, in traditional settings, where early marriage and childbearing for girls is common, parents usually decide when and whom girls will marry and this can have varying effects on women's power in the new household. Additionally, women may have autonomy from the very beginning of their lives and maintain that level of

autonomy as they undergo life transitions like educational attainment, marriage, and fertility. In other cases, women may gain or lose autonomy through these changes.

Previous research in South Asian contexts suggests that several individual level factors, including age, religion, age differences with husbands, and marital status are important determinants of autonomy (Gupta and Yesudian 2006; Kantor 2003; Kishor 2000; Rahman and Rao 2004). In the case of age, women may experience different levels of autonomy at different stages of the life course. Older women, past their reproductive years, typically have greater freedom of movement and control over household decisions (Acharya et al. 2010; Mahmud, Shah and Becker 2012; Rahman and Rao 2004).

Religion, specifically being of the Muslim faith, has also been explored as an individual determinant of autonomy (Jejeebhoy and Sathar 2001; Morgan et al. 2002; Rahman, Mostofa and Hoque 2014; Yount and Agree 2004). In Egypt, being non-Muslim is associated with greater financial and life course decisions (Yount and Agree 2004). However, a comparison of scores for economic autonomy among Muslim and non-Muslim women in 14 paired communities in 4 different Asian settings found that in only 4 of the communities, Muslim women had less economic autonomy (Morgan et al. 2002). These findings show that there is substantial variation in the effect of Islam on women's autonomy and caution against over-generalization about the link between Islam, patriarchal norms, and women's household autonomy.

Family compositional factors like marriage and age differences between spouses are also likely to be important since women's personal control will be based on the attitudes of others in her household (Kantor 2003; Rahman and Rao 2004). Majority of studies of autonomy and reproductive behavior are of ever married or married women (Upadhyay et al. 2014). Married women have more control over personal assets and income (Kantor 2003) than single women,

but Rahman and Rao (2004) suggest that the degree of control may depend on the level of consanguinity between the spouses. Women who marry at a young age generally have fewer personal financial resources than their older counterparts, tend to be more dependent on their husbands, and have a lower social standing in the household (Abadian 1996; Jensen and Thornton 2003). Women waiting longer to marry may have more opportunity for education, employment, and greater choice in a spouse, which can enhance women's ability to negotiate and make decisions (Fargues 2005; Niraula and Morgan 1996). The effect of age at marriage on autonomy is highly place dependent. For example, in northern Europe, upon marriage, young men are expected to give women decision-making capacities while in northern India, the marginalization of the bride continues even when the age at marriage rises (Gupta 1995). Women who are also closer in age to their husbands have more frequent communication and greater reproductive autonomy (Hogan, Berhanu and Hailemariam 1999b). The length of marriage can also effect women's autonomy as women in longer marriage have more household decision-making capacity (Hindin 2002).

While age and marital status are relevant to autonomy, education and employment are continuously cited as the most important individual determinants of autonomy (Al Riyami, Afifi and Mabry 2004; Anderson and Eswaran 2009; Balk 1994; Jejeebhoy 1995; Malhotra and Mather 1997; Oropesa 1997). Education and working prior to marriage may provide women with a greater sense of personal control, improved communication skills, and perhaps some independent assets (Murphy-Graham 2010). However, more education by itself does not necessarily reduce gender inequality in control of resources within the household (Schultz 1998). A woman's education, her mother's education, and her husband's education can all have independent effects on women's autonomy (Rahman and Rao 2004). The impact of women's

education on women's autonomy depends on the aspect of autonomy being examined. For example, education has been found to have an effect on women's decision-making, but no effect on mobility (Hussain and Smith 1999). The autonomy literature is also inconclusive about how women's husband's higher education affects autonomy. One body of research points to a husband's education leading to a more egalitarian relationship with his wife (Kishor 1995). However, as a man gains higher educational status, it reinforces his gender role as the dominator and could suppress his wife's autonomy (Rodman 1972).

Employment is also important because it may provide the potential for a woman to earn income of her own. The relationship between access to personal assets and autonomy is often examined through evaluation of micro credit programs and results vary. Having independent income or savings, may increase women's bargaining power and their ability to make decisions or have a voice in a household. Employment and control over personal assets has been associated with greater freedom of movement and decision-making (Acharya et al. 2010; Hashemi, Schuler and Riley 1996). Lack of financial assets severely limits women's choices by rendering them powerless to negotiate better terms for themselves in their households (Anderson and Eswaran 2009) and may make it impossible to leave. In contrast, women's access to financial assets can also threaten a man's position within the household resulting in greater conflict, less control for the woman, and violence in the household (Kabeer 2001). Furthermore, employment has also been found to lead to greater autonomy only if most women in the community also work (Dharmalingam and Morgan 1996).

2.4b Household Determinants of Women's Autonomy

While many studies focus on individual-level determinants of autonomy, only a few studies include household, community, or higher-level predictors of autonomy (Jejeebhoy and

Sathar 2001; Mason and Smith 2000). Gender-based research should examine women's status and autonomy within the context of women's lives to clarify the pathways that account for the differences observed (Moss 2002). Upadhyay et al. (2014) argue that it is essential to understand multilevel influences from the family to community to macro sociopolitical forces on women's autonomy. Women are not autonomous in a vacuum. They are autonomous relative to the other people or groups that intersect their lives. Since intimate relations are structured and issues of allocation of resources between sexual partners and between generations are organized and expressed within the household (Moss 2002), interfamilial relationships are central to household power dynamics. For women to be autonomous within the household, they must negotiate and exercise control over household decisions and relationships. Since the family or household is the fundamental setting in which women have (or lack) and exercise autonomy (Kishor 2000), it is important to understand household determinants of autonomy.

The limited research on household determinants of women's autonomy suggests that living with extended families and household wealth are important predictors. Research in highly patriarchal societies suggests that living with extended families lowers women's autonomy (Balk 1994). Husbands and in-laws may control women's access to children, food, money, and health services and ultimate decision-making control (Moss 2002). Household size is negatively associated with autonomy, but these women could be living in extended family households, where their decision-making capabilities may be curtailed (Rammohan and Johar 2009). Smaller households might enable women to more fully participate in the work force. However, more people in the house could also imply alternative sources of household labor, which would give women more control over their daily activities (Heaton, Huntsman and Flake 2005). To better understand what aspects of households influence women's autonomy and changes over time,

both household level measures and measures of autonomy that are based on household dynamics are necessary. This study situates autonomy within the household by looking at several household level measures like household wealth and household size. This study also incorporates several measures of autonomy based on household dynamics like household decision-making and mobility.

Households cannot be divorced from the wider socioeconomic context in which they are situated. The community or place in which the family lives can also determine the level of autonomy. The status of individuals and the control they have in any society is determined at least partially by gender imbalances within that community (Eguavoen, Odiagbe and Obetoh 2007). In urban areas, women are less secluded and more likely to work outside the home so there is more opportunity for women to control resources and make autonomous decisions (Corroon et al. 2014; Shapiro and Tambashe 1991). Women in urban areas also often have greater access to formal education, which could teach autonomous decision-making (Heaton et al. 2005). In addition to place, it is important to consider household wealth. While women in rural areas are often found to be less autonomous, women from wealthier households in rural areas are found to be more autonomous than women from poorer rural households (Senarath and Nalika Sepali Gunawardena 2009). In some cases, women in wealthier households have more resources to control and have greater autonomy (Rammohan and Johar 2009), and in other cases, women in wealthier households are isolated as a symbol of higher social class and have lower mobility (Rahman and Rao 2004; Sathar and Kazi 2000).

Community norms including religious norms can also help explain variation in women's autonomy (Dollar and Gatti 1999; Hogan et al. 1999b; Jejeebhoy and Sathar 2001; Rammohan and Johar 2009). At the community level, class biases that are oppressive to women, social

beliefs and norms, and practices that are biased against women's reproductive autonomy can also affect women's household autonomy (Kabeer 1999). For example, in India and Pakistan, region was used as a measure of the social system and to differentiate the more conservative non-egalitarian north with the south and consistently showed higher levels of autonomy among women in the south of the subcontinent (Jejeebhoy and Sathar 2001). In Nepal, a country with a lot of gender stratification, the patterns of women's autonomy vary considerably across regions depending on whether the dominant norms and social systems are more restrictive for women (Acharya et al. 2010). While there is widespread focus on individual-level determinants of autonomy, very few studies of autonomy include household, community, or social determinants of autonomy (Acharya et al. 2010; Jejeebhoy and Sathar 2001; Mason and Smith 2000). Some work on the risk of domestic violence includes community level measures of women's status, like an average of women's education for a certain region (Koenig et al. 2003; Koenig et al. 2006; McQuestion 2003). Since the research on multi level determinants of women's autonomy is limited, this study looks at individual and household level predictors of autonomy and community variation in autonomy to better understand the determinants of autonomy over time.

Importantly, most empirical research on women's autonomy and on demographic processes and autonomy has been cross-sectional. Cross sectional work has failed to capture how autonomy can be dynamic and change over the life course (Malhotra and Mather 1997). While cross-sectional comparisons generally support the notion of life course variations in autonomy, they cannot shed light on when and how changes occur. The potential dynamic nature of autonomy implies that a woman's level of autonomy at any given time is a product of her prior autonomy (Lee-Rife 2010). This suggests that one should analytically control for autonomy at earlier life stages when looking at determinants of women's autonomy over time. This is often

not possible in cross sectional studies. Longitudinal designs can better reflect the process and trajectory of women's autonomy through various life course events and to determine the mechanisms that facilitate or hinder women's autonomy. Panel or retrospective data with robust measures of direct evidence of women's autonomy are particularly well suited to investigate shifts over the life course. This study takes this into account by utilizing longitudinal data and multi level predictors to capture determinants of and shifts in women's autonomy and the subsequent affects on fertility behavior over the life course in Egypt.

2.5 Women's Autonomy and Fertility Behavior

One of the most visible of all strategic decisions for women centers is the decision to have children. Women's participation in childbearing decisions demonstrates control over their bodies. Men and women have to decide whether to have children, how many to have, and when to have them. Shared decision-making means men have to be open to women's participation and women have to have enough autonomy to participate. Female autonomy is a known determinant of fertility decline (Balk 1994; Dyson and Moore 1983; Mason 1986). Women's autonomy affects fertility by capturing different aspects of women's roles and participation in fertility decision-making and behavior. In spite of considerable attention devoted to the investigation of the relationship between women's autonomy and fertility in the demographic literature, the empirical studies, however, have not been able to come up with a precise and consistent explanation of the relationship between the two variables in developing countries. This is partially due to the practice of using socioeconomic proxies as measures for women's autonomy.

There are several ideas about how women's household autonomy affects fertility. First, more autonomy can change a woman's fertility desires and allow for women's fertility desires to play an increasingly important role in fertility decisions. Greater autonomy is associated with the

desire for fewer children (Hogan, Berhanu and Hailemariam 1999a; Kritz, Makinwa-Adebusoye and Gurak 2000), but the association varies depending on how autonomy is measured (Moursund and Kravdal 2003; Upadhyay and Karasek 2012). In general, women's control over resources impact their gender value systems and fertility related attitudes in favor of fewer children (Amin and Lloyd 2002b; Kravdal 2001; McDonald 2000; Morgan et al. 2002).

Greater autonomy also enables women to enact these new fertility attitudes in relationships and make the wife's voice in fertility-related issues stronger (Mason 1987). Essentially, a woman's ability to implement fertility decisions is reduced by her low position in the household hierarchy. Women's autonomy in household decision-making can stand between the young woman's desire to have a small family and her ability to implement it. Less autonomy may limit a woman's ability to achieve her own reproductive health goals by limiting her access to information and her ability to negotiate the circumstances around sexual activity and fertility. Women with less control in relationships may be more restricted in family-planning decision-making, negotiations with partners about contraceptive use, and face more difficulty in enacting their fertility desires (Bawah et al. 1999; Blanc 2001; Harvey et al. 2002; Pulerwitz, Gortmaker and DeJong 2000; Wolff, Blanc and Ssekamatte-Ssebuliba 2000; Woolf and Maisto 2008). For example, in Zimbabwe, women with no decision-making autonomy had more children than women with some autonomy (Hindin 2000). Women with greater autonomy also have longer birth intervals, or time-to-conception intervals, demonstrating their ability to exert their fertility desires (Al Riyami and Afifi 2003; Feldman et al. 2009; Upadhyay and Hindin 2005). Longer birth intervals can also lead to fewer births.

A second idea is that more autonomy means that more weight is given to the woman's health and wellbeing in fertility decisions (Mason 1987). Essentially, imbalances within sexual

relationships favor males (Blanc 2001; Gupta 1995). Blanc (2001) notes that when there is an imbalance of power, one partner can assert their reproductive health goals, and potentially lead to negative outcomes for the other partner (e.g., unwanted pregnancy). The wife pays a higher cost than the husband in getting and raising children so more autonomy causes the family to have fewer children and invest more in each child (Eswaran 2002). As more autonomy is given to a woman to help her reach the level of autonomy a man has within the household, the woman and her needs play a greater role in fertility decisions.

Thirdly, a lack of autonomy may influence sexual and reproductive health through associations with increased risk of gender-based violence. The perpetration of male-female violence within a relationship is an extreme example of the lack of autonomy in a relationship, and much has been written about less contraceptive use and higher unintended pregnancy consequences of violence within a relationship (Alio et al. 2009; Diop-Sidibe, Campbell and Becker 2006; Sarkar 2008; Williams, Larsen and McCloskey 2008). Violence towards women is also associated with higher rates of sexually transmitted diseases including HIV/AIDS and adverse birth outcomes (Gielen et al. 1994). The fear of domestic and intimate partner violence is also a barrier to contraceptive use (Alio et al. 2009; Williams et al. 2008). More recently, attitudes towards intimate partner violence are also used as a measure of women's autonomy because the expression of violence is a product of cultural, socioeconomic, and power relations towards women (Ambrosetti, Abu Amara and Condon 2013; O'Campo et al. 1995; Uthman, Moradi and Lawoko 2009).

A fourth perspective assumes that autonomy is associated with fertility in the same way as measures of women's status (education and employment) and fertility. Substantial research supports the association between women's educational achievement and increased use of

contraceptives (Gwako 1997; Jejeebhoy 1995; Schuler et al. 1997) and many have shown that both individual increases in education and average community-level education are associated with lower fertility (Balk 1994; Dyson and Moore 1983; Hindin 2000; Jejeebhoy 1995; Kravdal 2001, 2002; Mari Bhat 2002; Martin 1995; Martin and Juarez 1995; Ni Bhrolchain and Beaujouan 2012). Women with lower education, both in the household and in the greater community, and women who are not employed also have shorter birth intervals compared to women of higher status (Setty-Venugopal and Upadhyay 2002). However, there is also debate as to why education and fertility are associated and what mechanisms link education to lower fertility (Basu 2002).

In fact, the direct impact of socioeconomic variables on the hazard of conception are very small (Bascieri and Hinde 2007). However, education and employment do increase the cost of having children, which has a direct influence on fertility outcomes such as contraception use and desired number of children (Balk 1994; Mason 1987). Since there are competing demands for women's time and resources, and women make choices depending on these constraints, decisions about children are made while taking other life course experiences, like education, into consideration. Some argue that increases in education attainment also increase knowledge of and access to contraceptives, which subsequently lower fertility, some argue that educational attainment leads to greater labor force participation as a competing behavior to having children, and lastly, others posit that increases in education lead to gains in female autonomy, more control of fertility behavior, and subsequently, lower fertility (Mason 1986, 1987; Presser and Sen 2000). It is unclear if education gives women more autonomy or if it provides them with the opportunity to learn about modern contraception (Mason 1986).

Whether women's autonomy is the pathway by which education influences fertility and operates directly and/or indirectly on fertility has not been fully explored. The tradition that measures autonomy through socioeconomic proxies is once again drawn into question since education and employment are independently associated with fertility and might affect fertility through women's autonomy. It is important to look at the independent effects of education and autonomy to disentangle the influence on fertility. Actual measures of autonomy, like decision-making, provide additional explanatory power for fertility related behaviors net of traditional measure of women's status such as education and labor force participation (Bhatti and Jeffery 2012; Hindin 2000).

A fifth perspective explains the association between autonomy and fertility through increased access to care and contraceptive use. Greater autonomy leads to greater access to care and contraceptive use and subsequently, lower fertility. Due to limited mobility, access to financial resources, or subjugated position in the relationship, a lack of autonomy may influence sexual and reproductive health outcomes through limiting the ability for women to access reproductive health services, including contraceptives (Ahmed et al. 2010; Kamiya 2011; Mistry et al. 2009; Mumtaz and Salway 2005). The greater control over mobility women have, the more likely they are to obtain and use contraception (Govindasamy and Malhotra 1996). Women who have more control over economic decision-making are also more likely to be involved with their husband's in family planning and therefore, more likely to use any method, female-only methods, and barrier methods compared with women who are not autonomous (Do and Kurimoto 2012).

Importantly, while some work shows that more autonomy leads to greater contraceptive use, other studies have shown no association or negative associations. For example, in

Bangladesh, autonomous women were more likely to use contraceptives, use contraceptives in the future, and have discussions with husbands about contraceptives (Rahman et al. 2014). Other studies have also shown that women who participate in decisions more often are also more likely to use contraceptives (Hogan et al. 1999b; Jejeebhoy 1991; Presser and Sen 2000). However, in Ethiopia, women's autonomy was not found to have a significant effect on couple's contraceptive use (Haile and Enqueselassie 2006; Stephenson, Bartel and Rubardt 2012). In several African countries, freedom of movement as a measure of autonomy was also not associated with contraceptive use (Do and Kurimoto 2012). In trying to disentangle the mixed results for autonomy and contraceptive use, interactions with poverty have been found as poor women with less autonomy are the least likely to use contraceptives (Bamiwuye, De Wet and Adedini 2013). Additionally, while autonomy within the relationship is important for contraceptive use, this varies widely by communities and community level factors (Elfstrom and Stephenson 2012). In order to understand whether autonomy affects fertility through contraceptive use, the relationship between autonomy and contraceptive use and autonomy and fertility has to be examined further.

Beyond providing several explanations for the relationship between autonomy and fertility, there are additional limitations to the autonomy and fertility research. First, there is a predominance of studies from South Asia, and other regions, like the Middle East, are minimally represented. Second, most studies include only currently married women and no studies include never married women. While in many settings, most fertility related behavior is amongst married women, including women who are not married could show interactions between autonomy and relationship status on fertility outcomes (Upadhyay et al. 2014). Third, only a few studies consider influences of community-level measures of women's autonomy on reproductive

outcomes (Balk 1994; Pallitto and O'Campo 2005; Presser and Sen 2000). Multiple levels of analysis are needed to examine how social environments shape autonomy and its relationship to fertility (Malhotra 2012; Upadhyay et al. 2014). This study uses multilevel modeling to shed light on the complex relationship between communities, women's autonomy, and fertility.

Fourth, almost all of the work on autonomy and fertility is cross sectional, which further limits the understanding of the mechanisms that link autonomy to fertility. Cross sectional work by nature limits our ability to understand how autonomy causes changes in fertility outcomes. Cross sectional work also does not allow for determination of the direction of causality and the relationship between autonomy and fertility can go both ways. Reproductive decisions trigger a set of future decisions about employment, practices surrounding motherhood and childcare, and dynamics within a household. Reproductive choice may be a trade-off for other sources of power in that bearing the right number of children might give a woman (Kabeer 1999). It is important to also consider how childbearing affects future household autonomy. For example, autonomy itself is influenced by reproductive events, like the birth of a baby (Hindin 2000; Presser and Sen 2000). In Nepal, if the first born is a boy, then the wife has more influence and relatively fewer children, but if the first born is a girl, then, in families where the husband has greater influence on household decision-making, there are more children (Gudbrandsen 2013).

Reproduction encompasses more than the single event of having a child. It triggers a set of other future choices that push women toward specific paths in line with norms and social and cultural ideas, and practices surrounding childcare and motherhood. In some cases, having children can increase a woman's autonomy by raising their value in society and to their families. Some research shows that as women have more children or sons, their level of autonomy increases (Hindin 2000; Mumtaz and Salway 2005). In other cases, motherhood can exacerbate

gender inequalities derived from gender roles. Very little attention is given to the role of reproductive events on women's future autonomy. The question of whether fertility can increase autonomy is not considered or tested (Malhotra 2012). Reproductive events might influence a woman's sense of autonomy in different ways and through different pathways and are important to consider when looking at autonomy over the life course. Longitudinal data that considers women's autonomy during important life events like marriage and first birth will help show the bidirectional relationship between autonomy and fertility over the life course. This study uses longitudinal data to look at how past autonomy affects fertility and how fertility affects future household autonomy in Egypt.

2.6 The Egyptian Context

2.6a Fertility and Contraceptive Use in Egypt

Childbearing patterns have changed dramatically throughout the Middle East and North Africa, such that women overall now have only about three lifetime births, down from about seven children in 1960. Egypt's trajectory is representative. In Egypt, the decline in fertility began in the first half of the 1960s coinciding with public recognition of population increase as a potential threat to development efforts. During the 1980s and 1990s, the decline in fertility picked up speed. During this period, the lack of women's autonomy was not a barrier for the fertility decline (Amin and Lloyd 2002b). From the early 1990s to the 2000s, the fertility rate stalled and declined from 2.7 to 2.3 births per woman (El-Zeini 2008). Now, in the past six years, Egypt's fertility jumped from 3 births per woman back up to a 20-year high of 3.5 births per woman (Bertoli and Marchetta 2015; Central Agency for Population Mobilization and Statistics 2014; Central Intelligence Agency 2013).

Since 2008, fertility has been rising in Egypt. The major question that remains for Egypt is whether this new higher rate of fertility will be sustained or how the country will complete the fertility transition that began several decades ago. High fertility can impose a costly burden for Egypt: it can hinder economic development, increase health risks for women and children, and erode quality of life by limiting access to education, food, employment, and potable water. Even if the fertility rate declines to replacement level fertility (just over two children per woman), the population will continue to grow. The current population is 78 million people (see Figure 2.1), but United Nations projections indicate that the population will grow to 95.6 million by 2026 and will reach 114.8 million before it stabilizes in 2065 – an increase of approximately 84% over the current total (United Nations 2012).

The pace of fertility decline is determined by the pace of changes in three determinants: socioeconomic development, couples' economic aspirations and expectations, and the accessibility and acceptability of birth control (Casterline and El-Zeini 2007). The main barriers to the achievement of replacement level fertility in Egypt are economic development and couples who are willing to only have two children (El-Zeini 2008). In Arab societies, a woman's value is strongly tied to her fertility (Inhorn 2003). In Egypt in 2005, 23% of 19 year old women were already mothers or pregnant (Rashad, Osman and Roudi-Fahimi 2005). Egypt is characterized by first births soon after marriage and aversions to one-child families (Eltigani 2000). Norms of femininity include premarital virginity and marital fertility and both are tied to family honor. There is widespread indifference between having two or three children (El-Zeini 2008). There is a strong preference for sons as well as a preference to have both a son and a daughter (Yount, Langsten and Hill 2000). The birth of a son is tied to better health and mental health outcomes (Yount 2005c; Yount et al. 2000; Yount and Smith 2012).

Some couples are willing to have a two-child family, but do not feel a need to practice family planning. Debates about birth control in Egypt have their roots in the 1930s when concerns about population growth, the condition of the urban lower classes, the health of mothers and children, and the state of the Egyptian family converged to link issues of population with the production of healthy Egyptian citizens. While people will argue against birth control use, a concept that resonates with Egyptians is the idea of improving the quality of offspring. All share a concern about how best to ensure the production of healthy future generations of Egyptian citizens (Yount and Rashad 2008). Throughout the 1950s, overpopulation was increasingly becoming a problem. By 1955, the National Commission on Population Affairs expanded provision of birth control. In 1955, the commission opened 8 family planning clinics, 4 in Cairo and 4 in Alexandria (Yount and Rashad 2008). Although male contraceptives predated the birth control pill and IUDs by decades, neither volunteer organizations nor the state made any serious attempt to disseminate condoms or encourage their use. Shortly after the provision of birth control in Egypt, Egypt's National Family Planning Program was launched and contraceptives were available at most government run clinics. However, contraceptives are only given to married women who had proved that they had at least three children, provided their husband's written consent, and had strong health, social, or economic reasons for wanting to limit family size (Yount and Rashad 2008). In 2005, over 50% of ever-married women in Egypt were not using a contraceptive method. About 16% of women who do not want to have any more children are not using a contraceptive method (El-Zanaty and Way 2009).

The availability of contraceptives varies widely by region, with a lack of access in Upper Egypt (Southern Egypt – see Figure 2.3) (Giusti and Vignoli 2006). Perhaps related to the lack of availability, women who do not feel a need to engage in family planning are primarily located in

Upper Egypt (Casterline, El-Zanaty and El-Zeini 2003; Giusti and Vignoli 2006). Contraceptive use in Upper and rural Egypt remains low because of barriers like access, lack of knowledge, side effects of methods, husband's disapproval, and a fear of using services (Eltohy, Saboula and Hussein 2013). Greater control or autonomy is a means of overcoming these barriers. Based on data from the 1990s in Egypt, women's autonomy, as measured by decision making and freedom of movement, explains both the need for and use of modern contraceptives, net of any education or employment effects in (Govindasamy and Malhotra 1996; Presser and Sen 2000; Rastogi and Nguyen 2005). However, greater participation in household decision-making is not associated with use of health services in Egypt (Chiang et al. 2012). Beyond these relationships with determinants of fertility, little is known about the relationship between autonomy and fertility in modern Egypt.

As fertility is at 20-year high in Egypt, it is important to understand both determinants of fertility in that context and whether women's autonomy is related to fertility. In the Egypt, since so much weight is given to a woman's fertility, an important issue is whether having a child affects women's later household autonomy. No studies of autonomy, contraceptive use, and fertility have used longitudinal data and most are over ten years old, not accounting for recent social changes in Egypt.

2.6b Women Status and Autonomy in Egypt

Understanding the circumstances of women surrounding autonomy and fertility in Egypt requires an earnest consideration of both the social and cultural structure for women in Egypt. Both a woman's autonomy and fertility and the relationship between the two cannot be understood apart from her context. In other words, women's issues and gender concerns are endemic of society's broader dynamics. Egypt has declared its acceptance of the growing

concern for the eradication of discrimination against women. However, women's rights are limited by legal traditions and social practices, thus, ultimately caught in a contradictory cultural foundation (El-Safty 2004). Egypt signed the Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW) on July 16, 1980 and ratified it on September 18, 1981. However, in a patriarchal, traditionally male-dominated culture, women face inequalities across policy and community sectors as well as in the household.

In terms of policy, national laws and institutions largely reinforce the social and economic dependence of wives (Ammar 2006). Divorce laws invariably grant custody of children to husbands and there are few legal protections for intimate partner violence, so that many women stay in dysfunctional marriages to keep close contact with children. Islamic laws governing inheritance also favor men, husbands, and sons over women, wives, and daughters. Islamic law views fathers as the natural guardian of children; mothers are the physical custodians. Egyptian law does not prohibit spousal abuse, but some recent changes address violence indirectly (Ammar 2006). For example, if violence contributes to a woman's spontaneous abortion then it is prohibited and illegal. Egyptian law does not restrict women's access to land, access to property other than land or access to bank loans. An increasing number of women are engaged in business transactions and financial activities, even though some culturally rooted traditions may restrict their actual control over and management of assets. Women's mobility is often limited, but women in cities have more freedom of movement than women in rural areas (Ghannam 2013). Until 2000, to travel outside the country, unmarried women under 21 years of age must have obtained their father's permission to obtain a passport and wives of any age need their husband's permission (Ammar 2006).

Family and the household context is the main source of social and financial support for most Egyptian women (Yount and Khadr 2008). Historically, Egypt is a patriarchal society and married men serve as heads of households and make decisions for the household and its members (Bier 2011; Yount 2005a). However, young men and women in some parts of Egypt believe that household decisions should be shared (Mensch et al. 2003). A key source of inequality between women and men stems from the way they are expected to spend their time. Women take on traditional roles in the household and higher education and outside labor force participation is infrequent for Egyptian women (El-Zanaty and Way 2009). The 2005 Egyptian Demographic and Health Survey showed that only 59% of ever-married women were literate, 35% had never attended school, and 11% had less than a primary education (El-Zanaty and Way 2009). At all level of incomes, women do the majority of housework and care and, correspondingly, spend less time in education and market work. Men are expected to work. Since the 1970s, Egypt has had massive waves of migration of young men towards oil-producing Arab countries. Labor migration towards high-income Arab countries is almost primarily from rural areas, exclusively male, and predominantly temporary in nature. In rural areas, this increased male emigration for work has led to greater female labor market participation (Binzel and Assaad 2011). While there is no empirical evidence to support, there are fears that return migrants from the Gulf countries bring back more conservative views about women to Egypt.

In both urban and rural areas, children reside with their parents until men have secured enough resources for marriage and women have gotten married. The median age of first marriage varies from 18 years in rural Southern Egypt (Upper Egypt) to 23 years in the urban governorates of Cairo, Alexandria, Port Said, and Suez (El-Zanaty and Way 2009). The minimum age of marriage is 16 years for women and 18 years old for men. In 2004, 15% of girls between the age

of 15 and 19 were married (El-Zanaty and Way 2009). In the past decade, there has been reference to a 'marriage crisis' in Egypt reflecting a growing number of men and women who are not able to marry due to financial constraints or who marry at a much later age compared to previous generations (Ghannam 2013). Marriage is also a process a process spanning several months through an informal and formal engagement and informal and formal wedding. It is not a singular event and can take a couple years. Polygamy is allowed under Islamic law; however, the prevalence of polygamy is quite low in Egypt at about 3% (Presser and Sen 2000).

Endogamy and dowries are also common in Egypt. Women are often married to cousins or other close relatives. By strengthening natal ties, a familiar family relationship may increase women's autonomy within her marital family (Bhatti and Jeffery 2012; Dyson and Moore 1983; Weinreb 2008; Yount 2004). In Egypt, dowries are a means of maintaining social status by allowing women's families to attract husbands of at least equal social standing (Amin and Lloyd 2002a; Anderson 2007). Women married with a dowry could increase the economic resources of the marital household and increase the woman's control over household wealth and within the household (Srinivasan and Bedi 2007).

After marriage, women's responsibilities and obligations are transferred from her natal family to her husband's family (Morsy 1993; Singerman 2006). Even after marriage, living close to a woman's birth family is not uncommon as women are expected to visit and assist their families. This proximity allows parents to provide social support, which may enhance women's influence in marital decisions (Yount 2004, 2008). Newly married couples often live with of the husband's family and intergenerational co-residence in extended family households is common (Yount 2005a). Patrilocal residence, where a married son remains in his father's house may reduce a wife's autonomy (Balk 1994; Yount 2005a, 2005c). This is often the case when there is

status inconsistency where a woman's relative resources exceed those of her partner (Anderson 1997, 2005). In 2000, women were granted the right to divorce due to incompatibility, but they have to relinquish their financial claims as wives. This makes it difficult for women to live by themselves. Divorce is also highly stigmatizing for women, and divorced women do not remarry.

An example of women's inequality in Egypt, operating at multiple levels from the community to the household (often in the context of marriage), is the high prevalence of violence against women. The occasional use of violence (both within and outside the family) is expected and sanctioned when it upholds specific social norms and hierarchies. Domestic violence against women is common (Yount 2005b, 2005c). For example, a man slapping his wife when she does not obey him in front of others is praised (Ghannam 2013). However, violence in the other direction – a wife beating her husband, excessive use of violence, and violence used to enhance one's own interests is highly stigmatized (Ghannam 2013). One third of ever-married women accepted at least one reason for intimate partner violence (El-Zanaty and Way 2009). Muslim women more often have agreed that intimate partner violence is justified (Yount 2005b). Another salient example of early exposure to violence in Egypt is female genital mutilation. In 2005, 96% of women 15 to 49 years old had experienced genital cutting (El-Zanaty and Way 2009). A higher frequency of intimate partner violence is associated with a lower likelihood of current contraceptive use, other health problems, and lack of professional care in Egypt (Diop-Sidibe et al. 2006). The frequency of spousal abusive in Egypt is indicative of the persistence of patriarchal norms and social barriers for women.

Besides characteristics of marriage, religion may also affect women's status and autonomy in Egypt. While most Egyptians are Muslims, a minority is Christian (5%), and Christians concentrate in Upper Egypt (Southern Egypt). Attitudes towards gender norms and

intimate partner violence may vary by religious beliefs (Yount and Li 2009). Views about women's family roles differ across Christian and Muslim Egyptian groups. Islam outlines separate family roles for men and women where the husband or father is the head of the household and economic provider and the wife or mother is the housekeeper and caretaker. Christian groups endorse women's education and participation in community development. However, being Muslim has been linked to greater financial decision-making among women in Egypt (Yount and Agree 2004). As previously mentioned, there is substantial variation in the effect of Islam on women's status and autonomy (Jejeebhoy and Sathar 2001; Morgan et al. 2002; Zakarriya 2014). Importantly, the focus on Islam in Egypt often sidelines serious discussions of socioeconomic disparities. Socioeconomic realities are central to gender inequities across Egypt. Place and social spaces are classed and gendered at the same time. For example, urban or rural environments shape access to education and health as well as economic opportunities.

Urban life is key to understanding patriarchy in Egypt (Ghannam 2013). Egypt is the most populous nation in the MENA region and the world's 22 Arabic-speaking countries. Egypt is characterized by a wide territorial extent and by very differentiated regional characteristics. Besides the differentials related to the urban/rural area of residence, there exists marked regional heterogeneities, mainly due to the geographic isolation of some areas and to the uneven income distribution. Administratively, Egypt is divided into 26 governorates grouped together as the Urban Governorates (Cairo or Alexandria, Port Said, and Suez), and the governorates of Upper and Lower Egypt (see Figure 2.2). Lower Egypt lies in the north and consists of the Nile delta, while Upper Egypt is the region south of the Nile Delta. The majority of Egyptians live either in the Nile Delta located in the north of the country or in the narrow Nile Valley south of Cairo.

Egypt has the most densely settled population among the Arab countries. The total area of the country covers approximately one million square kilometers. However, much of the land is desert, and only 6 percent of Egypt's area is inhabited. Less than 2% of the population resides in the rest of Egypt (see Figure 2.2).

Overall, the population of Egypt is more rural than urban, and Upper Egypt lags behind Lower Egypt in terms of most social and demographic indicators, including less schooling, higher rates of poverty, unemployment, and mortality. About 25% of the Egyptian population lives in Upper Egypt, and over ninety percent of the poorest villages are in Upper Egypt (Handoussa 2008). The socioeconomic disparities in Upper Egypt contribute to gender disparities, lower status of women, and poor health outcomes. Women in Upper Egypt often have worse outcomes across health and social indicators as compared to women in other regions of Egypt (Akmatov et al. 2008; Ambrosetti et al. 2013; Casterline et al. 2003; El-Zeini 2008; Entwisle, Casterline and Sayed 1989; Giusti and Vignoli 2006; Govindasamy and Malhotra 1996). Fertility rates are also high in rural Upper Egypt, an area least able to support rapid population growth. Little is known about regional differences in women's autonomy or household control in Egypt.

2.6c The Arab Spring and Egypt

Between 1980 and 2010, Egypt had one of the greatest increases in educational achievement, compared to other countries in the Middle East and North Africa, with the average total years of schooling doubling during this period. However, women's education remains lower than men. It also had one of the highest unemployment rates (Campante and Chor 2012). In the 2000s, the Mubarak government's deteriorating ability to provide basic services and the widespread nature of unemployment, poverty, and conspicuous consumption among the business

elite alienated tens of millions of Egyptians. Fewer economic opportunities and higher unemployment led to dissatisfaction with the leadership and lack of opportunities for human development which, in turn, ultimately led to the January 25, 2011 uprising known as “the Egyptian Revolution of 2011” (Kuhn 2012).

During the eighteen days of protest, men and women created communities on the streets and squares. Most of the early Arab Spring uprisings were in Cairo and Alexandria where the population is very urban. Sharing sleeping space and food, men and women bracketed their old gender norms, as evidenced, for example, by the total absence of sexual harassment and the acceptance of women as equals. From January 2011 to June 2013, Egyptian women workers, liberal and Islamist feminists, and political activists played a pivotal role in political change in Egypt, first, in driving Mubarak from power, and second, in exposing patriarchal rules of the military council and Mohammed Morsi (Zakarriya 2014). Since Mubarak was ousted on February 11, 2011, Egypt has continued to experience major upheavals, including an election and a coup d’etat. There are tensions and frequent violence between secular and religious groups. Egypt is still experiencing transitions, both demographically and politically.

The end of the Mubarak era was an unexpected expression of social, gender, and generational inequality. When women encounter social disorder, it may change gender hierarchies, but it also might reinforce the status quo by causing fear of victimization and social isolation. During the protests, women were very active, have taken positions in the public arena, and put forward their demands (Ghannam 2013). There was no violence against women during the initial protests, but shortly afterwards, violence and sexual harassment against women escalated (Johansson-Nogues 2013). The sexual violence towards women sharply increased during the rule of the military council and continued under Morsi’s rule (Zakarriya 2014). As the

Arab Spring entered the political transition phase, women expected to be recognized as co-revolutionaries and entitled to a say over the future of their country. They expected to gain more extensive political, legal, and socioeconomic rights as well as safety from sexualized violence. However, the political transitions in Egypt have only ushered in mixed messages and continued insecurity for women (Hamdy 2012; Johansson-Nogues 2013). Since February 11, there are tens of political parties with many women involved, but the successive ministerial cabinets only include one female minister (Sholkamy 2012). In an opinion poll of gender experts on women's rights worldwide in November 2013, Egypt was ranked as the worst country in the Arab world to be a woman, ranking below than Iraq and Afghanistan (Boros 2013). Which political and religious group ultimately rules Egypt has important implications for women's rights (el-Issawi 2011).

The uprisings have impacted Egypt across sectors. For example, the conflicts related to the Arab Spring have heavily impacted migration to the southern Mediterranean with many Egyptian labor migrants returning home and choosing not to return to Libya and Syria for work (De Haas and Sigona 2012; Fargues and Fandrich 2012). Approximately, 200,000 Egyptian labor migrants returned home after the conflict in Libya (Hafez 2012). Additionally, in the last couple of years, due to conflict in neighboring countries, Egypt has also received massive influx of refugees and undocumented Libyan, Syrian, Iraqi, and Sudanese migrants. There is increasing concern that returning labor migrants from Gulf Arab countries bring back more conservative views on women and threatens the status of women in Egypt.

An important question in transitional Egypt is whether women will have more or less control at all levels from the household to the macro political sphere. Questions remain as to whether gender power relations can be transformed, whether men and women are willing to

challenge the patriarchal society, and whether men and women will challenge existing power relations. Despite the unknown future, Egypt in the midst of the Arab Spring provides a unique opportunity to study social change. Beginning to understand how the Arab Spring has affected women inside the household will help show the status of women in a transitional Egypt and create a better sense of how to improve women's status. In addition, given the country's historical emphasis on traditional gender roles and the fear of the more recent turn towards restrictive gender roles, it is important to determine whether and to what extent women's autonomy has changed over time and what the implications are for the current fertility rates. Investigation of the determinants of female autonomy before and after the Egyptian revolution uprisings allows assessment of some aspects of how women's status is continuing to change in a changing Egypt.

2.7 Theories of Women's Power and the Life Course

To investigate the determinants of women's autonomy and implications for fertility behavior in Egypt, the theoretical framework for this dissertation integrates two main theories: the theory of gender and power and the life course perspective.

2.7a Theory of Gender and Power

The foundation for my theoretical framework is the theory of gender and power. In 1987 Robert Connell, an Australian sociologist, developed the theory of gender and power after identifying a need for an integrative feminist theory to explain gender and power (Connell 1987). The theory of gender and power asserts that gender-based inequalities are pervasive societal characteristics which result in men's disproportionate power in society and their control over decision-making in a number of areas (Pulerwitz et al. 2000). This study directly integrates this

theory by looking at different areas in which men are potentially exercising power over women and the implications for women's household autonomy.

The theory of gender and power functions at a structural level, addressing both institutional and societal aspects, and takes the broader context of women's lives into consideration. According to Connell, three major structures characterize the gendered relationships between men and women: the sexual division of labor, the sexual division of power, and the structure of cathexis (Wingood and DiClemente 2000). The sexual division of labor is defined as the differential allocation of women and men to different occupations (Connell 1987). The sexual division of power is differential allocation of power between men and women. The structure of cathexis is defined as the structure of affective attachments and social norms. This structure constrains and shapes people's emotional attachment to each other (Connell 1987). As a unit, these structures function at societal and institutional levels and explain the gender roles assumed by men and women.

Sociopolitical forces that reinforce social norms and segregate power keep the structures rooted at the societal level. At the institutional level, these structures are shaped by the school system, work, family, religious institutions, medical systems, and the media. Through social mechanisms like discrimination, unequal distribution of resources, stereotyping, and the imbalance of control, the structures are reinforced (Wingood and DiClemente 2000). These mechanisms create gender-based inequities, which create exposures or risk factors that could adversely impact women's health. Exposures can be economic, social, or physical, and risk factors can be socioeconomic, behavioral, or personal. Risk factors produced by the structures function at the interpersonal or individual level. Social and structural support for inequitable gender norms negatively influences sexual and reproductive health behaviors by supporting male

dominance of the female partner (Pulerwitz and Barker 2008; Pulerwitz et al. 2000). In this study, I identify specifically what exposures lead to risk factors for decreased autonomy of women in Egypt.

I integrate exposures derived from each of the structures each of these structures by hypothesizing relationships between social and economic exposures and women's autonomy over time and relationships between dimensions measures of autonomy and fertility behavior over time. For the sexual division of labor, since work and school are the primary institutions impacted by this structure (Wingood and DiClemente 2000), I hypothesize that increased exposure to education and employment is associated with greater autonomy. This aligns with the research on socioeconomic imbalances and women's autonomy.

For the sexual division of power, power is defined as “the power to act or change or having power over others” (Wingood and DiClemente 2000). The sexual division of power can be measured through both physical and behavioral aspects such as perceived control, communication skills, history of sexual and physical abuse, partner perceptions of health behaviors, and self-efficacy. I integrate measures of women's participation in household decision-making as an indicator of autonomy and perceived control. I hypothesize that women with greater household decision-making capabilities will have greater control over their fertility and ultimately, fewer children.

Social mechanisms that reinforce the structure of cathexis include the biases people have about how men and women should express their sexuality, enforcement of gender roles, and taboos about women's sexuality (Wingood and DiClemente 2000). Relationships, family, and religious entities are the primary institutions that drive this pathway. This study takes a multi level approach to integrate the household environment in predicting autonomy over time and

integrates measures of attitudes towards gender roles to capture the structure of cathexis.

According to the theory of gender and power, the greater a power imbalance in favor of men, the greater disadvantage for women and subsequently, greater risk. The theory acknowledges that there are large structural entities at play that limit the role or decision-making power of women in society and this study draws on this idea to identify pathways that increase or decrease women's autonomy.

2.7b Life Course Perspective

One of my central hypotheses is that autonomy changes across space and time in Egypt. This stems from the life course perspective, which highlights the importance of the timing, sequencing, and duration of life events as well as their association with behavioral outcomes (Elder 1998). The life course theory is built around the idea that 'human development and aging are lifelong processes and understanding development involves taking a long-term perspective' (Elder, Johnson and Crosnoe 2003). The life course perspective also acknowledges that historical times shape people's lives, events can have different effects depending on timing with a person's life, an individual is embedded within a larger social system and that social system influences individual decisions, and people have agency and control over their decisions. The life course perspective also implies multiple levels of study from the macro level of social institutions to the micro individual level (Elder et al. 2003). Essentially, larger social changes influence individuals through interpersonal contexts, like families. Also, since lives are interdependent, transitions in one person's life creates transitions for others as well. Therefore, human behavior cannot be understood in isolation from relationships with others. The life course perspective shows the importance of age, timing of events, and human interconnectedness as well as position individual choice and decision-making in a broader social and historical context.

In terms of women's autonomy, this implies that there may be a substantial lag time between exposure to an event and autonomy or women's autonomy may fluctuate over the life course depending on events. Studies from India show that women's autonomy is low during early childhood, rises during adolescence, and drops sharply upon marriage, remaining low during the early reproductive years. Rising during the later reproductive years to a high when the woman becomes a mother-in-law and grandmother. It drops slightly in extreme old age (Gupta 1995). By observing lives over substantial periods of time, using longitudinal data, there is potential to better observe the influence of social and historical changes on women's autonomy.

Just as the life course perspective implies this study focuses on pathways and the timing and sequence of multiple transitions, rather than single transitions and the influences on autonomy, power, and fertility. This study uses this approach by using longitudinal data to observe social influences on changes in household autonomy and fertility over time. Since autonomy can change based on life events and context, and given the changes in the Egyptian context in the past 15 years, the life course perspective is the ideal fit for studying women's autonomy in Egypt.

2.7c Conceptual Model

In this section, I describe the integrated conceptual framework of women's autonomy and fertility for the proposed study as shown in Figure 2.3. Individuals are affected by the households and locations, which they reside, as indicated by the separate boxes for individual characteristics, household characteristics, and location of the household. The solid arrows indicate relationships that are being tested by this study, while dotted arrows indicate relationships that are not being tested. The bolded arrows indicate relationships of primary interest. The arrow across the bottom shows that these events occur across time and the life span.

The conceptual framework is well suited to guide the achievement of the study's specific aims. The conceptual framework shows that autonomy changes based on different events over the life course. For the first and second aim, the relationships between measures of women's status, life transitions, and autonomy are explored. For the third aim, the relationship between autonomy and fertility is explored. Autonomy is always operationalized as individual and joint participation in household decision-making, mobility, gender-based attitudes, access to financial resources, and attitudes towards domestic violence.

Based on previous research, measures of individual women's status include age, age at marriage, marital status, education, and employment. Household determinants include residential location, household size, and household wealth. Spousal characteristics include migration, education, employment, and age. As depicted in the conceptual framework, household characteristics like household size and wealth influence individual characteristics like education and employment. Education and employment are separated as measures since they are often used as proxy measure of autonomy. Individual characteristics like education and household characteristics like wealth lead to women's autonomy. Additionally, if the woman gets married, then age at marriage and the characteristics of marriage may change autonomy.

Additional attributes of marriage important for the Egyptian context like the cost of marriage (dowry) and the duration of the marriage process are included. A dowry often serves as a reflection of the man's value in the marriage market. Women married with a dowry could increase the economic resources of the marital household and increase the woman's control over household wealth and within the household (Srinivasan and Bedi 2007). Since marriage in Islamic societies is a process spanning several months, the marriage process is included. Women who are rushed through the stages of the marriage process could have less control in the

household than those who are able to take their time. Since endogamy is common in Egyptian society, relationships with husbands are considered as a familiar family relationship may increase women's autonomy within her marital family (Bhatti and Jeffery 2012; Dyson and Moore 1983; Weinreb 2008; Yount 2004).

These marriage and marital family characteristics can moderate the relationship between education and employment and autonomy. A woman might gain autonomy through educational achievement, but then, marry into a family where the mother-in-law exhibits a lot of control resulting in a loss in autonomy. The effect of education and employment on autonomy for those who are married is potentially different from those who are not married. The relationship between employment and autonomy can vary depending on if the husband has migrated for work. The location of the marital household also can affect household wealth. Household wealth could positively affect decision-making because women would have more control over resources. Location of the household is of particular importance because of the large differences in levels of economic development, education, and social conservatism in Upper and Lower Egypt and in urban and rural areas.

Additionally, while certain socioeconomic indicators affect early in life autonomy, fertility can influence later in life autonomy. For the third aim and the relationship between autonomy and fertility the conceptual model shows that autonomy can influence fertility behaviors. Women's autonomy can also affect contraceptive use, which then, influences fertility outcomes.

2.8 Research Questions and Hypotheses

In Egypt, what aspects of women's lives affect autonomy and what are the implications for fertility? For all study aims, women's autonomy is measured by four behavioral measures:

individual household decision-making, joint household decision-making, freedom of movement or mobility, and access to financial resources and two attitudinal autonomy measures: attitudes towards gender roles and attitudes towards domestic violence.

2.8a Research Questions and Hypotheses for Study Aim #1

Study Aim#1: To examine the determinants of women's autonomy. To address this study aim, I ask the following research questions:

Question 1.1: Which individual, household, and community characteristics affect women's autonomy?

Question 1.2: Are determinants of women's autonomy consistent across data sources?

I will address the first aim by testing the following research hypotheses:

Hypothesis 1: Household determinants of women's autonomy will add explanatory power to the model beyond that which individual-level factors add. Individual determinants include age, education, characteristics of marriage, and employment, while household determinants include household size, household wealth, household location, and characteristics of spouses like migration and education.

Hypothesis 2: Community membership will help explain differences in autonomy. Given the heterogeneity of Egyptian society, social contexts of communities as defined by geographic location will explain variation in autonomy.

Hypothesis 3: The determinants of autonomy will not be consistent across measures of autonomy and will instead, vary based on the measure of autonomy used. For example, I expect that spousal characteristics like closeness in age and education will be associated with joint household decision-making and financial autonomy, but not necessarily with whether women

make decisions entirely on their own because spousal similarities in age and education are associated with more communication and access to resources.

Hypothesis 4: The determinants of autonomy will remain the same across data sources. Triangulation of data by using two different sources will demonstrate validity and that similar individual and household characteristics are associated with the same measures of autonomy.

2.8b Research Questions and Hypotheses for Study Aim #2

Study Aim #2: To examine the changes and determinants of changes in women's autonomy over the life course. I pose the following research questions to investigate this study aim:

Question 2.1: To what extent has women's autonomy changed over time?

Question 2.2: What individual, household, and community characteristics affect changes in women's autonomy?

Question 2.3: How does fertility affect women's autonomy over the life course?

The second aim will be achieved by testing the following research hypotheses:

Hypothesis 1: Women's autonomy will improve over time. Women's autonomy at Time 2 will be significantly better than at Time 1.

Hypothesis 2: Household determinants of women's autonomy will add explanatory power to the model beyond that which individual-level factors add. Individual determinants include age, education, characteristics of marriage, and employment, while household determinants include household size, household wealth, household location, and characteristics of spouses like migration and education.

Hypothesis 3: Community membership will help explain changes in autonomy.

Hypothesis 4: Women's autonomy is influenced by both fixed-time variables like background characteristics and by time-varying variables like fertility that only develop as the

life course progresses. At later stages in the life course, women's autonomy is determined by changing circumstances like family formation. Women who have had a birth will have greater autonomy later in life.

2.8c Research Questions and Hypotheses for Study Aim #3

Study Aim #3: To examine the relationship between women's autonomy and fertility over the life course. I pose the following research questions to investigate this study aim:

Question 3.1: To what extent does women's autonomy affect fertility behavior over time?

Question 3.2: To what extent does women's autonomy affect contraceptive use?

I address the third aim by testing the following hypotheses:

Hypothesis 1: Greater autonomy early in life is associated with lower fertility. Women with more autonomy will have fewer children.

Hypothesis 2: Greater autonomy is associated with increased use of a contraceptive method.

2.9 Chapter Summary

In this chapter, I described the importance of studying women's autonomy, and provided a brief review of the literature on individual and household determinants of autonomy. I also briefly reviewed the literature on the relationship between autonomy and fertility, and the current sociopolitical and family context of Egypt. Thereafter, I reviewed theories to show why certain aspects of women's lives should be expected to have an impact on autonomy over time, and I presented my conceptual framework. In the last section of this chapter, I presented the research questions and hypotheses that guide this dissertation.

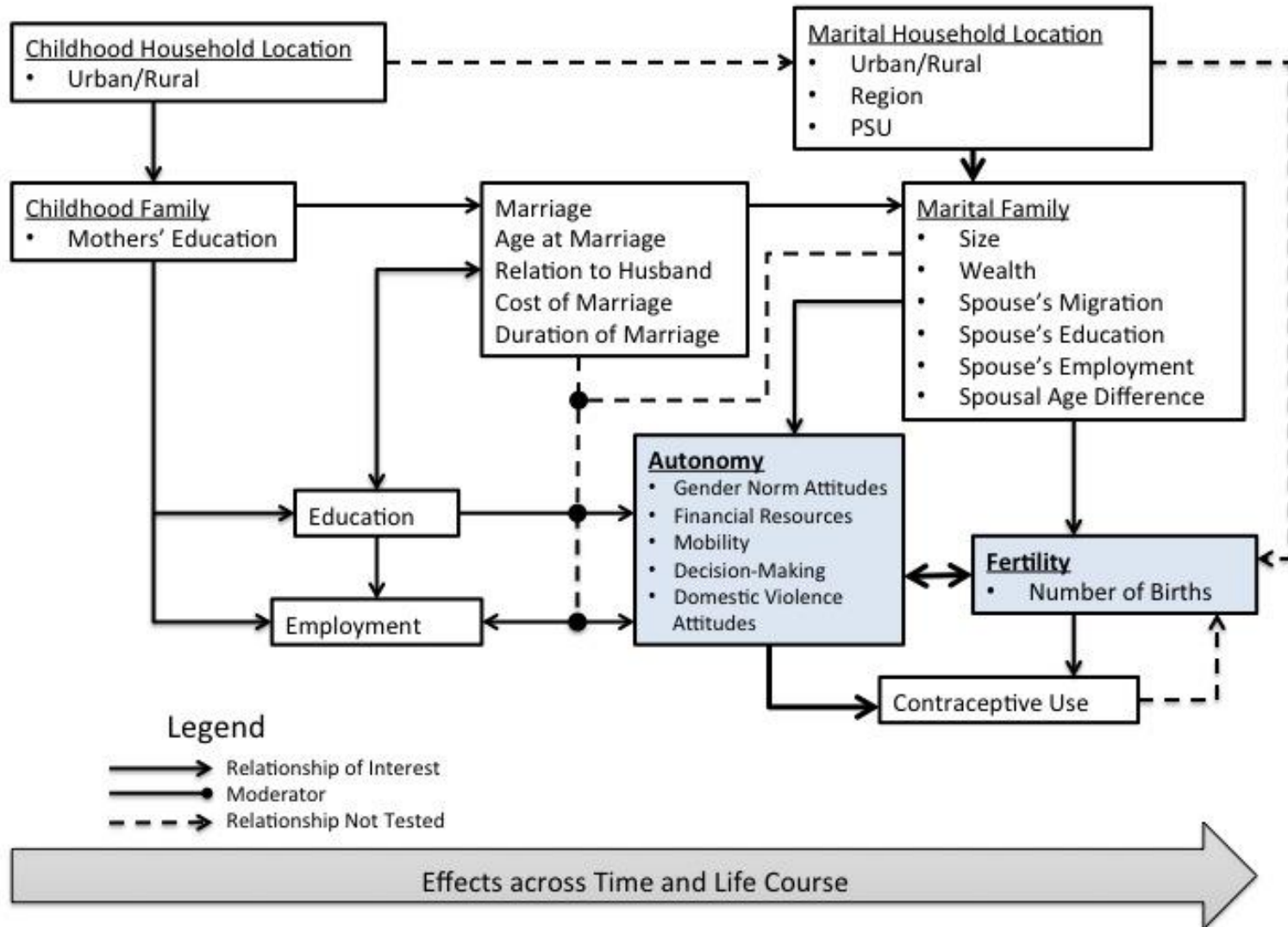
Figure 2.1 Distribution of Population in Egypt



Figure 2.2 Map of Regions in Egypt



Figure 2.3 Conceptual Framework of Autonomy and Fertility



Chapter Three: Research Design and Methods

3.1 Introduction

This chapter presents the research methods used in this dissertation, which focuses on determinants of women's autonomy and the relationship between autonomy and fertility. To incorporate a life course perspective, this dissertation requires a longitudinal dataset that situates a cohort of individuals within their historical time and place. The study is based on secondary data analysis of data from the Egyptian Labor Market Panel Survey (ELMPS), a national probability sample of households in Egypt, and the Egyptian Demographic and Health Survey (EDHS).

The ELMPS is designed to study labor force participation of families over time in Egypt. This study uses a combination of cross sectional data from the 2006 and 2012 ELMPS, longitudinal data linking the 2006 and 2012 ELMPS waves, and cross sectional data from the 2008 EDHS. The use of both the EDHS and ELMPS allows for comparison of research questions and similar measures of autonomy across two datasets. The EDHS also includes measure of contraceptive use, which are necessary to address the third research aim. Analyses are performed within a multilevel framework where level-2 is community, defined as primary sampling unit, and level-1 is the individual. The study includes both urban and rural communities in Egypt.

In the first section, I briefly describe the ELMPS and EDHS including the data collection procedures. I then describe how I operationalized the individual and neighborhood measures employed in this analysis. Next, I provide an account of the derivation of the analytic sample used to achieve the specific aims of this dissertation. The final section of this chapter provides the data analysis plan, included a brief description of the specific analysis performed for each study aim and hypothesis.

3.2 Data

3.2a Egyptian Labor Market Panel Survey

The Egyptian Labor Market Panel Survey (ELMPS) is a nationally representative panel survey of households in Egypt. Data were collected at three points in time: Wave 1 data were collected in 1998, Wave 2 data were collected in 2006, and Wave 3 data were collected in 2012. Data from the 2006 and 2012 ELMPS is well suited for this research because it was designed to study socioeconomic attributes of households and includes a large nationally representative sample of ever married women. The 2012 round of the survey provides a unique opportunity to ascertain the impact of the events accompanying the January 25th revolution on the lives of Egyptians and their families. The data contains individual-level information about education, age, gender, and many other demographic variables as well as household-level information about assets and consumption. Data on women's autonomy was first collected in 2006. The ELMPS measures of autonomy include: (a) a set of questions on participation in household decision-making, (b) questions about a woman's ability to move around on her own (mobility), (c) questions about women's attitudes towards gender norms and intimate partner violence, and (d) access to financial resources.

3.2a.1 ELMPS Study Design and Sampling

The panel sample of the ELMPS is a nationally representative two-stage self-weighted sample. The master sample consisted of 750,000 households in 500 primary sampling units (PSUs) each consisting of 1500 households. The master sample was extracted through a two-stage process. The country was divided into two strata: urban and rural. Each stratum is divided into substrata representing each governorate. All villages (for rural strata) or shiyakhas (an urban quarter for urban strata) were listed and assigned weight based on their population. The first stage consisted of choosing the villages and shiyakhas that would be represented in the sample

based on the principal of probability proportional to size. This means that a shiyakha or a village is possibly selected more than once if its size warrants that.

Each of the 26 governorates (see Figure 2.2) is allocated a number of PSUs in the master sample that is proportionate to its size and its urban/rural distribution. The selected shiyakhas and villages are divided into primary sampling units of 1500 housing units in each, and then, one or more PSUs are selected from each village or shiyakha. The master sample contains 306 urban PSUs and 194 rural PSUs. The survey sample includes 200 PSUs selected from the master sample. The desired number of PSUs in each substratum was selected from the number available in the master sample using a systematic interval. Cairo and Alexandria were deliberately over-sampled and rural areas under-sampled to increase the probability of obtaining women wage-workers in the private sector. In 2006, in addition to the panel, 2,500 new households were proportionately selected from the master sample. In 2012, a refresher sample of 2,000 households was selected from an additional 200 PSUs randomly selected from the master sample. By design, the 2012 refresher sample over-sampled high migration areas (Assaad and Krafft 2013).

Split households are those households formed by or joined by an individual who was a member of the 1998 data collection round. In rural areas, the research team faced the issue that many of the sons who marry, continue to live in the same dwelling unit. The definition of a separate household is one with a separate kitchen. An individual was part of the household if they were present in the household for at least six months. Table 3.1 shows the number of individuals and women who participated in each of the waves of data collection.

Table 3.1 Egyptian Labor Market Panel Survey Sample at Each Wave

Inclusion in Panel Rounds	Frequency of All Individuals	Frequency of Women
In 1998, 2006, and 2012	13,218	6,570
In 1998 & 2006	4,143	2,052
In 2006 & 2012	15,552	7,901
In 1998 Only	6,636	3,274
In 2006 Only	4,227	2,029
In 2012 Only	20,416	10,232

3.2a.2 ELMPS Sample

In 1998, 4,816 households were visited, in 2006, those same households plus a refresher sample of 2,500 households were visited, and in 2012, those same households plus a refresher of 2,000 households were visited. All data were self-reported during a face-to-face interview conducted by a trained field interviewer (Assaad 2009). In 1998, the overall response rate was 96.5% as 4,816 households and 23,997 individuals out of the 5,000 sampled households had completed interviews. In 1998, the major reason for non-response cases was the closure of the housing unit at the time of the survey. Only 23 cases actually rejected responding to the questionnaire (Assaad 2009). In 2006, 3,685 of the households from the original 1998 survey were located and 2,168 new households emerged from splits from the original household roster. In total, 8,351 households were surveyed in 2006 with 37,140 individuals. The attrition that occurred from the 1998 sample to the 2006 sample was mostly random in nature due to the loss of records containing identifying information for the 1998 household (Assaad 2009).

Of the 37,140 individuals interviewed in 2006, 28,770 (77%) were successfully re-interviewed in 2012. The attrition in the 2012 sample is due to two reasons. First, about 14% of the attrition is from a failure to track down households because of inaccurate address information or because households moved to an unknown location. The second type of attrition, accounting for 30% of the attrition, is due to not being able to account for individuals in a household either because of death or leaving the country. The probability of attrition between 2006 and 2012 is

lower in all other regions than Cairo. Households with male and younger heads of household had a higher likelihood of attrition. When the 2006 and 2012 samples are compared to the latest census in Egypt (the 2006 census), the only difference is that the census finds a slightly higher proportion of young children through the age of 20 than the ELMPS. The ELMPS samples fewer children who would have been 5 to 20 years old in the 2006 census. The final sample for the ELMPS 2012 includes 12,060 households, including 6,752 households from the 2006 sample, 3,308 households that emerged because of splits, and the new sample of 2,000 households. The 2012 sample includes 49,186 individuals of which 20,416 are new individuals and 28,770 were successfully interviewed in 2006. From 1998 to 2012, 13,218 individuals completed all survey rounds (Assaad and Krafft 2013).

3.2b 2008 Egyptian Demographic and Health Survey

The Egypt Demographic and Health Survey (EDHS) is funded by the United States Agency for International Development and is part of the MEASURE DHS project. DHS surveys provide data and analysis on population, health and nutrition indicators of women and children in developing countries. The MEASURE DHS project has supported over 80 countries for implementation of over 240 nationally-representative household and individual surveys. MEASURE DHS focuses on capacity building to assist countries to implement and manage DHS surveys through local organizations. DHS surveys are conducted with face-to-face interviews in the local language using trained domestic personnel from local organizations.

Standard DHS surveys have large sample sizes of usually over 5,000 households and are conducted every few years. The latest DHS survey from Egypt was conducted in 2008 and data was collected between March and May of 2008. There is another DHS survey schedule for Egypt in the coming year, but it has been delayed due to the current unrest. DHS surveys cover a broad

range of topics like household composition, access to media, maternal and child health, fertility and family planning, and women's empowerment and domestic violence. The 2008 EDHS was undertaken to provide estimates for key population indicators including fertility, contraceptive use, infant and child mortality, immunization levels, maternal and child health, and nutrition.

3.2b.1 EDHS Study Design and Sampling

The 2008 EDHS sample was drawn from an updated version of the 2006 census frame using a three-stage cluster design in rural and urban areas. The census provided information for the basic administrative units into which Egypt is divided. Shiyakhas and villages were used as the basic sampling units, and additional sampling stages were introduced to obtain the final sampling units from which the household sample was drawn. During the first stage selection, a total of 610 primary sampling units (275 shiyakhas and 335 villages) were chosen for the 2008 EDHS sample (El-Zanaty and Way 2009). At the third stage, 99% of identified households were interviewed. A household form gathered demographic data for all members and data on household amenities and ownership of consumer goods and durables. A woman's form was administered to all ever-married women 15 to 49 years old and gathered data on demographics, reproductive history, health knowledge and practices, and female genital cutting (in 1995–1996, 2005, and 2008) (El-Zanaty and Way 2009). A nationally representative sample of 16,527 ever-married women ages 15 to 49 were interviewed (El-Zanaty and Way 2009). The response rate for 15 to 49 year old women is 99.7% as 16,721 women were targeted and 16,527 completed interviews.

3.2c Data Permission and Human Subjects Approval

Respondents completed human subjects protection procedures, including informed consent for participation in either the ELMPS or the EDHS. Both the ELMPS and EDHS are

available online upon request. The ELMPS is available by request on the Economic Research Forum website (www.erfdataportal.com) and the EDHS is by request available on the MEASURE DHS website (www.measuredhs.com). I have received approval from both the Economic Research Forum and MEASURE DHS to use both datasets. For both the ELMPS and the EDHS, I completed a data confidentiality agreement, which allows me to use the data for the purposes of the proposed research.

3.3 Study Measures

This study has two primary outcomes: women's autonomy and fertility behavior. Autonomy is treated as both an independent and dependent variable. The primary relationship is between women's autonomy and fertility behaviors. However, to better understand women's autonomy, for the first and second aim, it is treated as a dependent variable to clarify pathways and determinants of women's autonomy and changes in autonomy over time. Sociodemographic individual and household characteristics are included in the analyses of the third aim as additional independent variables because they represent social and economic status, which have been linked to fertility. When these control variables are also correlated with autonomy, they may be sources of spuriousness. I need to control for them because I seek to demonstrate the effect of autonomy once these characteristics have been accounted for.

In the next section, I describe in detail how I plan to operationalize and measure each construct in my conceptual model. Where needed, scale items were reverse scored to ensure that all response codes are consistent with each other in terms of what a low or high value means, e.g., all indicators of mobility are scored so that a high score on each item means a greater freedom of movement.

3.3a Dependent Variables – Individual Level

Women's Autonomy

For the ELMPS, women's autonomy is measured through six different measures: gender role attitudes, access to financial resources, mobility, individual household decision-making, joint household decision-making, and attitudes towards domestic violence (See Table 3.2 for individual items). For the EDHS, women's autonomy is measured through individual household decision-making, joint household decision-making, and attitudes towards domestic violence (See Table 3.3 for individual items).

3.3a.1 ELMPS Autonomy Variables

Gender role attitudes is a 11-item continuous scale based on questions from the ELMPS (See Table 3.2). Respondents were asked to consider aspects of women's roles and indicate the extent to which they agreed (1=strongly disagree, 2=disagree, 3=indifferent, 4=agree, and 5=strongly agree) that: (a) "a woman's place is not only in the household but she should be allowed to work", (b) "if the wife has a job outside of the house then the husband should help her with the children", (c) "if the wife has a job outside the house then the husband should help her in household chores", (d) "a thirty year old woman who has a good job but is not yet married is to be pitied", (e) "girls should go to school to prepare for jobs not just to make them good mothers and wives", (f) "a woman who has a full-time job cannot be a good mother", (g) "for a woman's financial autonomy she must work and have earnings", (h) "having a full-time job always interferes with a woman's ability to keep a good life with her husband", (i) "woman should continue to occupy leadership positions in society", (j) "boys and girls should get the same amount of schooling", (k) "boys and girls should be treated equally." Principle components analysis shows that items all load on one factor. Therefore, item scores are averaged creating a

scale ranging from 1 for negative gender-based attitudes to 5 for very positive gender-based attitudes ($\alpha = .72$).

Mobility a continuous measure operationalized based on 4-items in the ELMPS assessing the respondents ability to leave the household (see Table 3.2). For mobility, respondents were asked whether they could go to a local market, health center or home of relatives or friends in the neighborhood, and if they could take children to a health center. Responses were reverse coded and included 4=without permission, 3=just inform them, 2=need permission, 1=cannot go alone, and 0=not allowed to go so that higher scores indicated greater control in personal mobility decisions. All items were included as the principal components analysis indicated that they loaded on one factor and the reliability ($\alpha = .79$) was higher when including all items. Items were averaged to creating a scale from 0 to 4 with higher responses indicating a higher amount of personal control in mobility decisions.

Financial autonomy is a dichotomous variable based on two items. Respondents were asked “do you have direct access to household money in your hand to use” and “do you personally have savings, own land, house, jewelry, or other valuables which you can sell or use as you please”. The responses to these two questions were combined: those who responded ‘yes’ to one or both items are defined as having access to financial resources while those who responded ‘no’ on both do not.

For *household decision-making*, respondents were asked who in the family had final say on a series of decisions including: (a) making large household purchases, (b) making household purchases for daily needs, (c) visits to family, friends or relatives, (d) food that should be cooked each day, (e) getting medical treatment or advice for the woman herself, (f) buying clothes for herself, (g) taking child to the doctor, (h) sending children to school, (i) sending children to

school on a daily basis, (j) buying clothes for children. Response categories include the respondent alone, husband, respondent and husband jointly, in-laws, respondent, husband, and in-laws or others. Items are recoded so that 6=respondent, 5=jointly by respondent and husband, 4=jointly by respondent, husband, and in-laws, 3=husband, 2=in laws, and 1=others. Since these response categories do not create an interval, two count variables capture household decision-making. A count of the number of times the respondent herself makes decisions, *individual household decision-making*, and a count of the number of times the respondent and somebody else within the household participate in decisions, *joint household decision-making*, capture the different ways a respondent has a say in household decisions. For both variables, counts range from 0 to 10 with a higher count indicating more participation on a greater number of household decisions. A combined measure of individual and joint household decision-making that is a count of both the number of times an individual and an individual and somebody else in the household participate is included in supplemental analyses in the Appendix.

Domestic violence attitudes is a 7-item scale assessing attitudes towards intimate partner violence. Respondents were asked if a husband is justified in beating his wife if (a) she burns the food, (b) she neglects the children, (c) she argues with him, (d) she talks to other men, (e) she wastes his money, and (f) she refuses him sex. Respondents were also asked if they are generally afraid of disagreeing with their husbands, fathers, brothers, or other males in the household. Yes or no responses were summed to create a scale that ranges from 0 to 7 with higher responses indicating a greater belief in domestic violence ($\alpha = .81$).

3.3a.2 *ELMPS Fertility Variables*

Fertility, the primary outcome, is assessed using two measures: given birth and number of births. *Given birth* is a dichotomous variable based on whether a woman has given birth. If there

is report of having at least given birth once then the variable is coded as '1=has given birth' and if the woman has not given birth, the variable is coded as '0=has not given birth'.

Number of births is a continuous variable of all births reported in the woman's birth history, regardless of the survival of the child. A woman has to have at least one birth to be included in *number of births*.

3.3a.3 EDHS Autonomy Variables

A shorter version of *household decision-making* can be derived from the EDHS. This version will be used for the third research aim and is based on 5 items. Respondents were asked to state who in the family had final say on the following decisions: (a) making large household purchases, (b) making household purchases for daily needs, (c) visits to family, friends or relatives, (d) getting medical treatment or advice for yourself, and (e) what to do with husband's money. Response categories include the respondent alone, husband, respondent and husband jointly, somebody else, or others. Response categories include respondent, respondent and husband, the husband, others in the household and the respondent, and others in the household. Similar to the ELMPS, since these response categories do not create an interval, two count variables capture household decision-making. A count of the number of times the respondent herself makes decisions, *individual household decision-making*, and a count of the number of times the respondent and somebody else within the household participate in decisions, *joint household decision-making*, capture the different ways a respondent has a say in household decisions. For both variables, counts range from 0 to 5 with a higher count indicating more participation on a greater number of household decisions.

Domestic violence attitudes is a 5-item scale assessing attitudes towards intimate partner violence. Respondents were asked if a husband is justified in beating his wife if (a) she burns the

food, (b) she neglects the children, (c) she argues with him, (d) she refuses him sex, or (e) she goes out without telling him. Yes or no responses were summed to create a scale that ranges from 0 to 5 with higher responses indicating a greater belief in domestic violence ($\alpha = .83$).

3.3a.4 EDHS Contraceptive Use Variable

Contraceptive use, an outcome for the third research aim, is assessed as '0=No Method' and '1=Uses a Method'. There is not enough variation in this measure to look at barrier methods vs. female controlled methods.

3.3a.5 Matching ELMPS and EDHS Autonomy Variables

To create comparable autonomy outcomes from the ELMPS and EDHS for the first research aim, shorter versions of the outcomes described above were coded. Specifically, *individual and joint household decision-making* were derived from the questions included in both surveys - who in the family had final say on the following decisions: (a) making large household purchases, (b) making household purchases for daily needs, (c) visits to family, friends or relatives, and (d) getting medical treatment or advice for yourself. Again, a count of the number of times the respondent herself makes decisions, *individual household decision-making*, and a count of the number of times the respondent and somebody else within the household participate in decisions, *joint household decision-making*, capture the different ways a respondent has a say in household decisions. For both variables, counts range from 0 to 4 with a higher count indicating more participation on a greater number of household decisions.

The matching *domestic violence attitudes* is a 4-item scale including the questions that are in both the ELMPS and the EDHS. Specifically, in both surveys, respondents were asked if a husband is justified in beating his wife if (a) she burns the food, (b) she neglects the children, (c) she argues with him, or (d) she refuses him sex. Yes or no responses were summed to create a

scale that ranges from 0 to 4 with higher responses indicating a greater belief in domestic violence.

3.3b Individual level Independent Variables

I will include a number of individual-level variables in my models including age, age at marriage, marital status, education, and employment. I expect each of these variables to be significant as past work or theory has demonstrated their correlation with women's autonomy or fertility behavior. All measures will be operationalized in the same way for the ELMPS and EDHS unless noted.

Age

I use the age in years of the respondents at each wave of the ELMPS and from the EDHS. Woman's age is measured as the woman's age in years at the time of the interview and is thus a continuous variable. For descriptive analyses, I also show the distribution of age in groups of five years from 15 to 49 years.

Marital Status

Marital status is a categorical variable, coded as '0=married' and '1=separated/divorced/widowed'. The analysis includes ever married women so those who were never married were excluded from the sample.

Married between 2006 and 2012

In order to see whether there are any differences in autonomy and fertility for women who were married before 2006 and those who were married between 2006 and 2012, a dichotomous measure is included in the longitudinal analyses that is coded as '0=married before 2006' and '1=married between 2006 and 2012'.

Age at Marriage

Woman's age at marriage is also operationalized to a categorical variable, coded as '0=Less than 18 years at marriage' and '1=Older than 18 years at marriage'.

Value of Dowry

The value of the dowry is a categorical measure indicating whether the respondent had no dowry or some dowry. I also include a category reflecting non-response for this variable because a sizeable proportion of women did not give an answer. The *value of dowry* is only included in the ELMPS analyses.

Marriage Process Duration

This variable is continuous in months. The *marriage process duration* is only included in the ELMPS analyses.

Related to Husband

A categorical measure of being related to one's husband is included. If the respondent reported being related to her husband, the variable was coded as one and those who were not were coded as zero. The *relation to husband* variable is only included in the ELMPS analyses.

Education

Education is defined as the last grade completed. Responses were recoded as "0=No education", "1=Primary", "2=Preparatory", "3=General or Technical Secondary – 3 years", "4=Technical Secondary – 5 years", "5=Intermediate or higher". Descriptive analyses also include a continuous measure of education as years of school completed. Mother's education as a measure of parents socioeconomic status is operationalized similarly with responses recoded as "0=No education", "1=Primary", and "2=Preparatory or higher".

Employment

Employment is based on whether a woman has ever worked and is currently employed. Specifically, *ever worked* is coded as ‘0=never worked’ and ‘1=has worked’. *Currently employed* is coded as ‘0=unemployed’, ‘1=employed’, and ‘2=out of labor force’.

Sons

Data on the gender of the children is available in the EDHS. Since women with a son can have higher autonomy (Hindin 2000), this variable is included and coded as a dichotomous variable for having a son vs. not having a son. The *sons* variable is only included in the EDHS analyses.

Religion

A measure of religion is available in the EDHS and 2012 ELMPS, is included, and coded as ‘0=Muslim’ and ‘1=Christian’. *Religion* is only included in the EDHS analyses and 2012 ELMPS cross sectional analyses.

3.3c Household and Spouse Independent Variables

Five household characteristics are included in this study: urban or rural residence, birth household location, household size, region, and household wealth. For married women, five characteristics of spouses are included: age, education, employment, migration, and religion.

3.3c.1 Household Variables

Urban or Rural Residence

Urban or rural residence represents the urban/rural residence of the respondent (meaning they are the regular residents of the surveyed household) based on the location of the interview. The variable is dichotomous and coded as ‘0=rural’ and ‘1=urban’. This measure is included in descriptive analyses, but is combined with region for the multivariate analyses (see below). *Birth*

household location is based on the respondent's report of whether their childhood household was in a rural or urban location and is coded in the same way as urban and rural residence.

Region

Given the vast differences across regions in Egypt, a measure of *region* is included. The governorates are grouped to form regions and these groupings can be found in Figure 2.2. This categorization is in line with how most researchers operationalize regions in Egypt and how the ELMPS categorizes regions (Assaad 2009; Assaad and Krafft 2013). The variable is coded as a combination of regions and *urban or rural residence* and is coded '0=greater Cairo', '1=Alexandria and Suez', '2=Urban Lower Egypt', '3=Rural Lower Egypt', '4=Urban Upper Egypt', and '5=Rural Upper Egypt' (see Table 3.4).

Household Size

Household size is a continuous measure based on the number of inhabitants in a household. This measure also indicates whether a woman resides with extended family as the two measures are highly correlated.

Household Wealth

Similar to past work in Egypt (Filmer and Pritchett 1999; Yount 2005b), an exogenous score for *household wealth* is used from responses to questions about the assets and amenities of each respondent's household. Questions about assets asked the head of household whether they owned each of the following items: fridge, freezer, dishwasher, colored TV, black and white TV, video, air conditioning, microwave, cooker/stove, electric fan, water heater, heater, sewing machine, iron, radio, washing machine, camera, bicycle, motorcycle, private car, taxi, truck, computer, cell phone, and satellite dish. Questions about amenities asked about the availability of electricity, type of flooring, number of rooms, sources of water, waste disposal, and type of

toilet. A principal components analysis was used to estimate a continuous measure. For analytic purposes, I divided the continuous household wealth scores into quintiles: poorest, poor, middle, rich, and richest.

3.3c.2 Spouse Variables

Husband's Age

Husband's age is measured the same as the woman's age in years at the time of the interview and is thus a continuous variable.

Husband's Education

Husband's education is defined as the last grade completed. Responses were recoded as "0=No education", "1=Primary", "2=Preparatory", "3=General or Technical Secondary – 3 years", "4=Technical Secondary – 5 years", "5=Intermediate or higher".

Husband's Employment

Husband's current employment is coded as '0=unemployed', '1=employed', and '2=out of labor force'. *Husband's employment* is only included in the ELMPS analyses.

Husband's Migration

Given the fear in Egypt that male migration to Gulf countries brings back more conservative views towards women, my analysis accounts for spousal migration. Husband's migration is a dichotomous variable, coded as '1' for the husband having migrated in the past year and '0' for no migration in the household. *Husband's migration* is only included in the ELMPS analyses.

Husband's Religion

The ELMPS-2006 does not include any measures of religion; however, in 2012, a measure of religion was added for males. For the 2012 cross sectional analyses, this measure is

included and coded as ‘0=Muslim’ and ‘1=Christian’. *Husband’s religion* is only included in the ELMPS analyses.

3.3d Definition of Community

I use the term “community” to describe local geographical areas. Communities were operationalized with primary sampling units. For the ELMPS primary sampling unit (PSU), each of the 26 governorates is allocated a number of PSUs in the master sample that is proportionate to its size and its urban/rural distribution. The master sample contains 306 urban PSUs and 194 rural PSUs (Assaad 2009). In 2006, there are 575 PSUs with an average of 11 observations per cluster. In 2012, there are 641 PSUs with an average of 12 observations per cluster.

3.4 Analytic Sample

3.4a The ELMPS Analytic Sample

Since data on women’s autonomy was first collected in 2006, this study is based on the 2006 and 2012 ELMPS interviews. I use data on autonomy at both waves two and three and socio-demographic characteristics of individuals and households primarily from wave two. I use multiple samples for the 2006 and 2012 cross sectional analyses and the 2006 to 2012 longitudinal analysis. I use samples of women between the ages of 15 to 49 to include women of reproductive age and to be able to compare results with the sample of women available for the EDHS. For each ELMPS cross section, I include a sample of ever married women and a sample of married women with spouses who have completed interviews for the ELMPS. For the longitudinal analyses, I include a sample of women married in 2006 and a sample of women who were ever married by 2012 to capture different effects of marriage.

For the 2006 cross sectional analyses, of the 37,140 individuals in 2006, 49% or 18,555 are women, 9,937 are between the ages of 15 and 49, and 6,609 are ever married. Of the 6,609

eligible respondents, 6,534 ever married women have complete information on autonomy outcomes, and 5,740 women are currently married with spouses in the ELMPS. The 6,534 women and 5,740 women comprise the two samples for the 2006 cross sectional analyses. Sample characteristics are available in Chapter 4, Section 3.

First, for the 2012 cross sectional analyses, I also use two samples of women: ever-married women (N=8,719) and married women (N=7,620) from the 2012 ELMPS. In 2012, 50% of the sample or 24,703 are women, 12,594 are between the ages of 15 and 49, and 8,902 are ever married. Of the ever married women, 8,719 have complete information on autonomy outcomes. There are 7,620 married women who have data on spouses available in 2012 and have complete information on autonomy outcomes. The 8,719 women and 7,620 women comprise the two samples for the 2012 cross sectional analyses. Sample characteristics are available in Chapter 5, Section 3.

For the analysis of women's autonomy over time and the relationship between autonomy and fertility in 2012, I also use two samples of women. The first sample consists of 15 to 49 year old women who are married in 2006 (N=6,269), have spouses in the ELMPS, and are present in the 2012 round of the survey (N=4,575). Between 2006 and 2012, 1,160 women were lost to follow up and 534 women do not have information on spouses in the 2006 or 2012 ELMPS. A discussion of how the panel differs from those who were lost to follow up can be found in section 6 of Chapter 5. Of these 4,575 women, 3,846 report on ever giving birth, and 3,749 women report on number of births. The second sample consists of 15 to 49 year old women in 2006, who are ever married by 2012 and are therefore present in the 2012 round of the ELMPS (N=6,594). Of these women, 5,211 reported their complete birth history in 2012. Sample characteristics are available in Chapter 5, Section 6.

3.4b The EDHS Analytic Sample

For this study, the final sample consists of 14,756 ever married women, ages 15 to 49 in 2008, who provided complete information on autonomy outcomes and contraceptive use. I use ever-married females because that is the sampling frame for females in the EDHS, and these are the women who were asked to respond to the family planning module. Of the 16,527 ever-married women, 93% or 15,406 are still married while 1,121 are divorced, widowed, or separated, and 14,756 responded to autonomy and contraceptive use questions. Sample characteristics are available in Chapter 4, Section 6.

3.5 Data Analysis Plan

In this section, I present my analytical approach for the study as a whole, followed by a more specific approach within each research question for the secondary analysis of the ELMPS and the EDHS. I have two different sets of main outcomes for analyses: autonomy and fertility (including contraceptive use). I use six indicators of women's autonomy, two indicators for fertility, and one indicator of contraceptive use. I will model and report each separately. For all research aims, I will use multilevel modeling. Continuous variables are modeled using multilevel ordinary least squares regression. Categorical variables are modeled using multilevel logistic regression. The models for testing the hypotheses and interpretation of the models were informed by (Raudenbush and Bryk 2001) and (Diez-Roux 2000). All analysis is performed using STATA 13. I will first discuss my overall approach to multilevel analysis after which I will address how the study aims are achieved. The details of the specific approach I use for each research question are provided in the chapter on results for that question.

3.5a Multi Level Modeling

For this data, repeated observations were collected from subjects at different periods, and these observations are nested within subjects. Furthermore, because these individuals belong to

different communities, they are considered to be nested within communities. To analyze such nested data, hierarchical linear modeling (HLM) is the preferred technique (Diez-Roux 2000; Raudenbush and Bryk 2001). This procedure accounts for correlation of the data within individuals, thus reducing the probability of a type 1 error that could be introduced if this correlation were ignored.

I will conduct two types of statistical analyses for this study. First, a set of single-level multiple linear regression analyses using ordinary least squares or logistic estimation methods will be performed to examine the relationships between individual and household characteristics and autonomy and autonomy and fertility. The ELMPS models are all self-weighted; however, the DHS single-level models are weighted in accordance with the sample weights available, making weighted results generalizable to the population of women of reproductive age in Egypt. In the second step of my analysis, I will assess the associations between individual and household characteristics and autonomy or autonomy and fertility accounting for community membership using 2-level hierarchical linear regression models (HLM) (Raudenbush and Bryk 2001). The multilevel models are not weighted.

In multilevel analysis, the variance in the outcome measure is examined at multiple hierarchical levels. In this study, individuals at level-1 are nested within communities at level-2. Initially, households were the second level. However, there were not enough households with multiple women to support this model structure (e.g. in the ELMPS-2006: 6196 households and 6534 women). With communities as the second level, for example, the variance in autonomy, is comprised of within group variation in education (i.e., variation in education among individuals in the same community) and between group variation in education (i.e., variation in education among the communities in the study) (Raudenbush and Bryk 2001). Looking at the variance in

this way assumes that community random effects are normally distributed with a mean of zero. For the communities in the study, the variance has to be equal to τ_{00} or the variance among the community mean autonomy. The multilevel model also allows for assessment of the proportion of between community variance in autonomy that is accounted for when communities are accounted for at level-2. The multilevel models can also show the distribution of autonomy across communities.

In an HLM, each one of the levels of nested data is represented as a submodel, enabling me to gauge the impact of each of the levels of the dependent variables. Level 1 represents the submodel at the most detailed level of the data (Raudenbush and Bryk 2001). In this study, level 1 represents the first submodel and denotes observations at the individual level (the within individual model). Level 2 represents the second submodel and final level of the hierarchy, and denotes observations related to the community as a whole (the between community model).

The levels are represented by different equations and models, which specify the relationships between the variables at that particular level, and also indicate how variables at one level influence the relationships at another level. In the models below, the first model is the level-1 or “within individual” model and the second model is the level-2 or “between communities” model. For example, for a continuous autonomy outcome, the equations are as follows:

$$\text{EQ1. Level - 1: } Y_{ij}(\text{autonomy}) = \beta_{0j} + \beta_{1j} (\text{Age}_{ij}) + \beta_{2j} (\text{Education}_{ij}) + \varepsilon_{ijk}$$

$$\text{EQ2. Level - 2: } \beta_{0j} = \gamma_{00} + \gamma_{01}(\text{Community Characteristics}_j) + \upsilon_{0j}$$

Equations one (EQ1) and two (EQ2) comprise the 2-level hierarchical linear regression model. EQ1 indicates that the autonomy score for individual i in community j is the result of: (a) the average autonomy score of the community in which the person lives, (b) the person's

individual characteristics, (c) residual variation in autonomy (i.e., variation that is not accounted for by ‘a’ and ‘b’). EQ2 shows that the average autonomy score of the community in which the individual resides is determined by: (a) the average autonomy score across all communities in the study, (b) the characteristics of the person’s community of residence, and (c) residual variation (i.e., variation in the average autonomy score of the community in which the individual lives that is not explained by ‘a’ and ‘b’).

The subscripts i and j represent the individuals and communities respectively. In the level-1 model, $Y_{ij(\text{autonomy})}$ is the autonomy score for individual i in community j . β_{0j} is the intercept or the average autonomy score for individual i in community j when all other covariates are equal to zero. Age_{ij} represents the years of age of individual i in community j . Education_{ij} represents the education completed by individual i in community j . β_{1j} is the effect of age on autonomy in community j controlling for education. ε_{ij} is an error term representing the unique contribution to variation in autonomy of individual i in community j (Rabe-Hesketh and Skrondal 2008).

In the level-2 model (EQ2), β_{0j} is the community specific intercept or the average autonomy for household j . γ_{00} is the common intercept across the communities (i.e., the average autonomy across communities when all other covariates are equal to zero). ν_{0j} is the unique contribution to the intercept that is associated with community j . The regression coefficients are functions of community-level variables. γ_{01} is the same across communities. So for EQ1 and EQ2 the relationship between age and autonomy, as represented by the intercept and slope is influenced by community level measures.

I will begin by estimating a null model to examine whether all dependent variables including autonomy and fertility vary significantly across households before introducing other

measures into the model. Using estimates from the null model, I will calculate the intraclass correlation (ρ) for a 3-level hierarchical linear regression model to assess the proportion of total variance in autonomy that is present at the household level (Raudenbush and Bryk 2001). After estimating the null model, I will adjust for individual-level covariates to see if significant between-household variation in autonomy remain. If so, I will proceed to test specific study hypotheses by introducing household factors into the model to see if they account for household-level variation in outcomes.

The modeling will be done in three steps: in step 1(empty model), no explanatory variable will be included; in step 2, only individual-level factors will be included; and step 3 both individual and household-level factors will be included. The intraclass correlation coefficient (ICC) can describe the degree of similarity or correlation between observations in the same cluster (Raudenbush and Bryk 2001). With the null models, I calculate the intraclass correlation for the 2-level model to assess the proportion of total variance in autonomy that is present at the community level. If the ICC supports the multilevel model, I proceed to test specific study hypotheses by including the individual and household characteristics in the model.

3.5b Analysis for Study Aim #1

Study Aim #1: To examine the determinants of women's autonomy.

Question 1.1: Which individual, household, and community characteristics affect women's autonomy?

Question 1.2: Are determinants of women's autonomy consistent across data sources?

My first research question aims to validate the first portion of the conceptual model I have described. For each autonomy outcome, I first generate a basic model testing the individual-level predictors, like age and education, and the six autonomy outcomes. Next, I add the household-level independent variables. I assess the changes in coefficients, p-values, the overall

model fit at each step to evaluate whether my hypothesized conceptual model fits the data. In the second part of the analysis for this aim, to test whether the determinants of autonomy are the same across data sources, I generate the exact same OLS and multilevel OLS models using the matching outcomes from the ELMPS and EDHS (individual and joint household decision-making and attitudes towards domestic violence).

Summary of Question 1 Approach for ELMPS:

Data Sources:	2006 Egyptian Labor Market Panel Survey
Sample:	2006 ELMPS (Wave II): Ever Married (N=6,534) and Married (5,740) Women Ages 15 to 49
Dependent Variables:	Gender attitudes, Mobility, Individual household decision-making, Joint Household decision-making, Financial Autonomy, and Domestic violence attitudes at Wave II.
Model type:	Gender attitudes: Multilevel OLS Regression Mobility: Multilevel OLS Regression Individual Decision-making: Multilevel OLS Regression Joint Decision-making: Multilevel OLS Regression Financial Autonomy: Multilevel Logistic Regression Domestic violence attitudes: Multilevel OLS Regression
Individual Independent Variables:	Age, Marital status, Age at Marriage, Marital Status, Value of Dowry, Marriage Process Duration, Related to Husband, Education, Ever Work, and Current Employment
Household Independent Variables:	Urban or Rural Residence, Birth Household Location, Household Size, Region, Household wealth
Spouse Independent Variables:	Age, Education, Employment, and Migration
Community Measure:	Primary Sampling Unit
Other Notes:	I use a step-by-step approach, adding groups of variables to the model and evaluating at each step.

Summary of Question 1 Approach for EDHS:

Data Sources:	2008 Egyptian Demographic and Health Survey
Sample:	Ever Married (N=14,756) Women ages 15 to 49 years
Dependent Variables:	Individual household decision-making, Joint household decision-making, and Domestic violence attitudes.
Model type:	Individual Decision-making: Multilevel OLS Regression Joint Decision-making: Multilevel OLS Regression Domestic violence attitudes: Multilevel OLS Regression
Individual Independent Variables:	Age, Age at Marriage, Marital Status, Education, Religion, Sons, and Ever Work
Household Independent Variables:	Urban or Rural Residence, Birth Household Location, Household Size, Region, and Household wealth
Spouse Independent Variables:	Age and Education
Other Notes:	I use a step-by-step approach, adding groups of variables to the model and evaluating at each step.

3.5c Analysis for Study Aim #2

Study Aim #2: To examine the changes and determinants of changes in women's autonomy over the life course.

Question 2.1: To what extent has women's autonomy changed over time?

Question 2.2: What individual, household, and community characteristics affect changes in women's autonomy.

Question 2.3: How does fertility affect women's autonomy over the life course?

For my second research question and to look at changes in autonomy, I will once again use multilevel models. First, I will repeat the 2006-ELMPS analysis described above for the 2012-ELMPS samples of ever married (N=8,719) and married (N=7,620) women ages 15 to 49 in 2012 to see if there are any changes between 2006 and 2012. Then, I use characteristics of women in 2006 and autonomy in 2012 to address how individual, household, and community

characteristics affect changes in autonomy. For each autonomy outcome, I first generate a basic model testing the time dependent individual-level predictors, like age and education, and the outcomes. Next, I add the time independent individual-level predictors, like age at marriage. In the final model, I add the household-level independent variables. I assess the changes in coefficients, p-values, the overall model fit at each step to evaluate whether my hypothesized conceptual model fits the data. For the third research question, I will treat autonomy as a dependent variable and test the relationship between fertility and autonomy. I expect that those who have had a child have more autonomy later in the life course. I will conduct the analysis for Aim #2 with the ELMPS only.

Summary of Question 2 Approach:

Data Sources:	2006 and 2012 Egyptian Labor Market Panel Survey
Sample:	ELMPS 2006 – 2012 Panel: Women who are married by 2006 (N=4,575) and women who are ever married by 2012 (N=6,594)
Dependent Variables:	Mobility, Individual household decision-making, Joint Household decision-making, and Financial Autonomy at Wave III (2012).
Model type:	Mobility: Multilevel OLS Regression Individual Decision-making: Multilevel OLS Regression Joint Decision-making: Multilevel OLS Regression Financial Autonomy: Multilevel Logistic Regression
Individual Independent Variables:	Gender attitudes, Mobility, Individual household decision-making, Joint Household decision-making, Financial Autonomy, Domestic violence attitudes, Age, Marital status, Age at Marriage, Marital Status, Value of Dowry, Marriage Process Duration, Related to Husband, Education, Ever Work, and Current Employment at Wave II (2006).
Household Independent Variables:	Urban or Rural Residence, Birth Household Location, Household Size, Region, and Household wealth at Wave II (2006).

Spouse Independent Variables: Age, Education, Employment, and Migration at Wave II (2006)

Community Measure: Primary Sampling Unit

Other Notes: I use a step-by-step approach, adding groups of variables to the model and evaluating at each step.

Summary of Question 2.3 Approach:

Data Sources: 2006 and 2012 Egyptian Labor Market Panel Survey

Sample: ELMPS 2006 – 2012 Panel: Women who are married by 2006 (N=4,575) and women who are ever married by 2012 (N=6,594)

Dependent Variables: Mobility, Individual household decision-making, Joint Household decision-making, and Financial Autonomy at Wave III (2012).

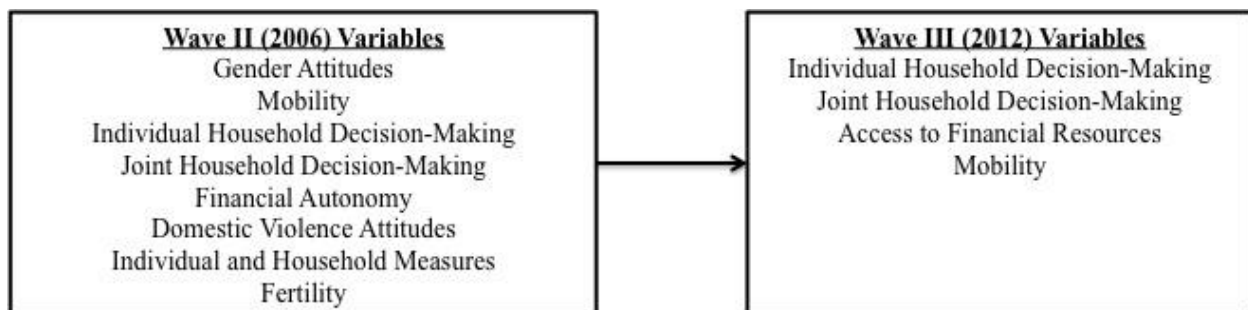
Model type: Mobility: Multilevel OLS Regression
 Individual Decision-making: Multilevel OLS Regression
 Joint Decision-making: Multilevel OLS Regression
 Financial Autonomy: Multilevel Logistic Regression

Independent Variables: Number of births by Wave II (2006)

Control Variables: Age, Marital status, Age at Marriage, Marital Status, Value of Dowry, Marriage Process Duration, Related to Husband, Education, Ever Work, Current Employment, Urban or Rural Residence, Birth Household Location, Household Size, Region, Household wealth at Wave II (2006).

Other Notes: I use a step-by-step approach, adding groups of variables to the model and evaluating at each step.

Figure 3.1 Summary of Question Two Approach



3.5d Analysis for Study Aim #3

Study Aim #3: To examine the relationship between women's autonomy and fertility over the life course.

Question 3.1: To what extent do changes in women's autonomy affect fertility behavior over time?

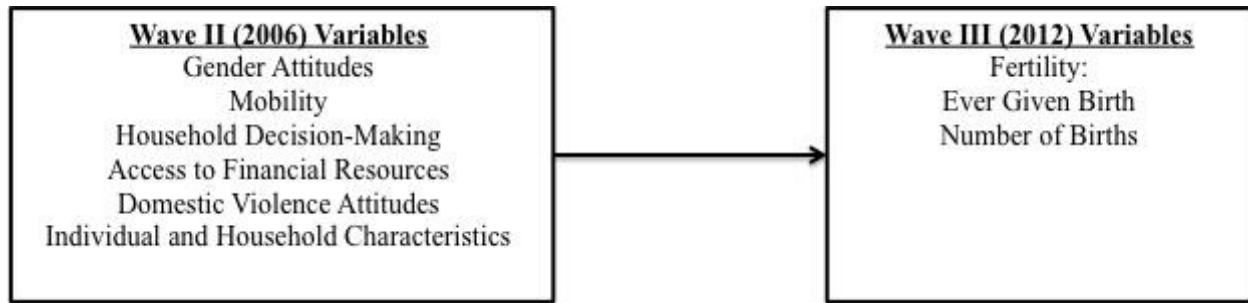
Question 3.2: To what extent does women's autonomy affect contraceptive use?

My third research aim validates the portion of the conceptual model linking autonomy to fertility behaviors. For the first research question, I test the relationship between autonomy in 2006 and ever having a birth and number of births in 2012 using the ELMPS. For the second research question, I test the relationship between autonomy and contraceptive use in the EDHS. For each of these models, I assess the p-values and the overall model fit to evaluate whether my hypothesized conceptual model fits the data.

Summary of Question 3.1 Approach:

Data Sources:	2006 and 2012 Egyptian Labor Market Panel Survey
Sample:	ELMPS 2006 – 2012 Panel: Women who are married by 2006 (N=4,575) and women who are ever married by 2012 (N=6,594)
Dependent Variables:	Ever had a birth, and number of births at Wave III (2012)
Model type:	Ever had a birth: Multilevel Logistic Regression Number of births: Multilevel OLS Regression
Independent Variables:	Gender attitudes, Mobility, Individual household decision-making, Joint Household decision-making, Financial Autonomy, and Domestic violence attitudes at Wave II (2006).
Control Variables:	Age, Marital status, Age at Marriage, Marital Status, Value of Dowry, Marriage Process Duration, Related to Husband, Education, Ever Work, Current Employment, Urban or Rural Residence, Birth Household Location, Household Size, Region, Household wealth at Wave II (2006).

Figure 3.2 Summary of Question 3.1 Approach



Summary of Question 3.2 Approach:

Data Sources:	2008 Egyptian Demographic and Health Survey
Sample:	Ever Married (N=14,756) Women ages 15 to 49 years
Dependent Variables:	Contraceptive use: no method vs. any method
Model type:	Multilevel logistic regression
Independent Variables:	Individual household decision-making, Joint household decision-making, and Domestic violence attitudes.
Control Variables:	Age, Age at Marriage, Marital Status, Education, Religion, Sons, Ever Work Urban or Rural Residence, Birth Household Location, Household Size, Region, and Household wealth

Chapter 3 Tables

Table 3.2 Questions comprising Autonomy Scales, Egyptian Labor Market Panel Survey

Autonomy

Gender Role Attitudes ($\alpha = .72$)

A woman's place is not only in the household, but she should be allowed to work.
If the wife has a job outside of the house then the husband should help her with the children.
If the wife has a job outside the house then the husband should help her in household chores.
A thirty year old woman who has a good job but is not yet married is to be pitied.
Girls should go to school to prepare for jobs not just to make them good mothers and wives.
A woman who has a full-time job cannot be a good mother.
For a woman's financial autonomy she must work and have earnings.
Having a full-time job always interferes with a woman's ability to keep a good life with her husband.
Woman should continue to occupy leadership positions in society.
Boys and girls should get the same amount of schooling.
Boys and girls should be treated equally

Mobility ($\alpha = .79$)

Can you go to the local market?
Can you go to the local health center?
Can you go to the homes of relatives or friends in the neighborhood?
Can you take children to the local health center?

Household Decision-Making

Who has final say on making large household purchases?
Who has final say on making household purchases for daily needs?
Who has final say on visits to family, friends, or relatives?
Who has final say on food that should be cooked each day?
Who has final say on getting medical treatment or advice for yourself?
Who has final say on buying clothes for yourself?
Who has final say on taking children to the doctor?
Who has final say on sending children to school?
Who has final say on buying clothes for children?

Domestic Violence Attitudes ($\alpha = .81$)

Is a husband justified in beating his wife if she burns food?
Is a husband justified in beating his wife if she neglects the children?
Is a husband justified in beating his wife if she argues with him?
Is a husband justified in beating his wife if she talks to other men?
Is a husband justified in beating his wife if she wastes his money?
Is a husband justified in beating his wife if she refuses him sex?
Are you afraid of disagreeing with your husband?

Table 3.3 Questions comprising Scales, Egyptian Demographic and Health Survey**Domestic Violence Attitudes**

- Is a husband justified in beating his wife if she burns the food?
 Is a husband justified in beating his wife if she neglects the children?
 Is a husband justified in beating his wife if she argues with him?
 Is a husband justified in beating his wife if she refuses him sex?
 Is a husband justified in beating his wife if she goes out without telling him?

Household Decision-Making ($\alpha = .83$)

- Who has final say on making large household purchases?
 Who has final say on making household purchases for daily needs?
 Who has final say on visits to family, friends, or relatives?
 Who has final say on getting medical treatment or advice for yourself?
 Who has final say on what to do with Husband's money?

Table 3.4 Definitions of Regions

Region	Rural or Urban	Governorates
Greater Cairo	Both	Cairo, parts of Giza, and parts of Kalyoubia
Alexandria and Suez Canal	Urban	Alexandria, Port Said, Suez, Ismalia
Urban Lower Egypt	Urban	Damietta, Dakhalia, Sharkia, Kafr-El-Sheikh, Gharbia, Menoufia, Behera, remainder of urban Kalyoubia
Urban Upper Egypt	Urban	Beni-Suef, Fayoum, Menia, Asyout, Suhag, Qena, Aswan, Luxur, remainder of urban Giza
Rural Lower Egypt	Rural	Damietta, Dakhalia, Sharkia, Kalyoubia, Kafr-El-Sheikh, Gharbia, Menoufia, Behera, remainder of Rural Kalyoubia and rural Ismalia
Rural Upper Egypt	Rural	Beni-Suef, Fayoum, Menia, Asyout, Suhag, Qena, Aswan, Luxur, remainder of rural Giza

Chapter Four: Aim 1 Results - Determinants of Women's Autonomy

4.1 Introduction

In this chapter, I present the results of the first study aim, which *examines the determinants of women's autonomy*. This aim has two main objectives, the first is to assess the extent to which individual, household, and community level factors affect women's autonomy. The second objective is to test whether the same determinants are associated with women's autonomy when using different data sources. The overall goal is to determine whether household level factors better predict women's autonomy. The main hypotheses include that household level factors and community membership will help explain variation in autonomy, specifically, gender-based attitudes, mobility, individual and joint decision-making, financial autonomy, and domestic violence attitudes. The remaining hypotheses are that determinants of autonomy will not be consistent across measures, but will however, be consistent across data sources.

The background section of the second chapter of this dissertation showed that various factors are associated with women's autonomy. As described in Chapter Two, the family setting is the place in which women gain and exercise control (Pallitto and O'Campo 2005; Upadhyay et al. 2014). Since intimate relations are structured and issues of allocation of resources between sexual partners and between generations are organized and expressed within the household (Moss 2002), interfamilial relationships are central to household power dynamics. Evidence from highly patriarchal societies suggests that living with extended families actually lowers women's personal autonomy (Balk 1994). Beyond family structure, household level factors as predictors of women's autonomy have received little research attention. As discussed in chapter two, there is reason to expect that household level variables and communities are more consequential to women's autonomy including their decision-making power, mobility, financial autonomy, and attitudes towards gender and domestic violence.

This chapter is divided into three sections. I begin, in section 4.2, by describing the analytic approach. Next, I present the sample characteristics for ever-married women and married women in the 2006 Egyptian Labor Market Panel Survey (ELMPS). Then, I examine the main effects on women's autonomy of individual and household level factors in women's lives. The fourth section presents the multivariate linear regression models and multi level models of women's autonomy by individual and household level factors for the ELMPS sample. In section 4.6, I present the Egyptian Demographic and Health Survey characteristics for ever-married women in Egypt in 2008. Section 4.7 includes the multivariate results for the EDHS outcomes. The next section shows the matching multilevel models for the identical outcomes from the ELMPS and EDHS. The chapter closes with a summary of findings and discussion of the determinants of women's autonomy.

4.2 Analytic Approach

4.2a ELMPS Analytic Approach

For the Egyptian Labor Market Panel Survey (ELMPS), I present the results of multilevel models for a total of five continuous outcomes of autonomy and one dichotomous outcome (financial autonomy). Continuous variables (gender attitudes, mobility, domestic violence attitudes, and individual and joint household decision-making) are modeled using multilevel ordinary least squares regression. Financial autonomy is modeled using multilevel logistic regression. All models are self-weighted as the ELMPS-2006 sample is self-weighted.

In order to replicate the extent literature on women's autonomy and to provide a benchmark model for the observed effect of individual characteristics on autonomy, my first set of models are at the individual level. First, I add age, then, all education variables, followed by all marriage variables, and employment. Then, I add the variables on location at birth and region, and finally, household wealth and size. Given the influence of husband's in households in Egypt,

I also show results of models with characteristics of the husband including husband's age, education, employment, and migration. I assess the changes in coefficients, p-values, and several measures of overall model fit at each step to help evaluate whether my data fit my hypothesized conceptual framework. My next set of models is multilevel with the first level being the individual and the second level being the community (PSU).

4.2b EDHS Analytic Approach

For the Egyptian Demographic and Health Survey (EDHS), I present the results of multilevel models for a total of three continuous outcomes of autonomy. Continuous variables (domestic violence attitudes, and individual and joint household decision-making) are modeled using multilevel ordinary least squares regression. All models are weighted.

The first sets of models are individual-level OLS models. The second sets of models are multilevel with the first being the individual and the second level being the community (PSU). The final sets of OLS and multilevel OLS models use identical outcomes from the ELMPS and the EDHS (domestic violence attitudes, individual decision-making and joint decision-making) to compare determinants of women's autonomy across measures and data sources.

4.3 ELMPS 2006 Sample Characteristics

Descriptive statistics for my primary ELMPS-2006 analytic sample are presented in Table 4L.1. The final sample consists of 6,534 women who were ever married and between the ages of 15 and 49 in 2006. The average age of sample respondents is 32 years and 94% are still married. The average age at first marriage is around 21 years old. About 30% of women are related to their husbands, most commonly as first cousins. The average duration between being engaged and formal marriage is 14.1 months. While 40.1% of the sample respondents did not receive a dowry, 33.4% received some amount of dowry. Majority of respondents' mothers

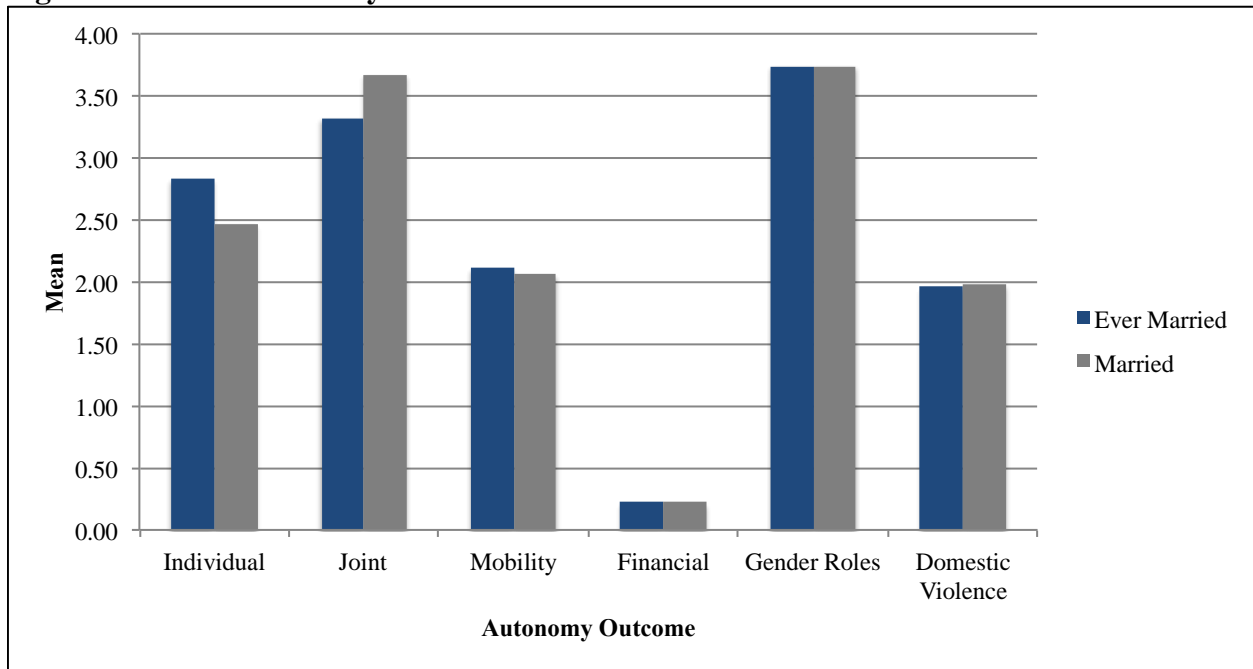
(78.8%) have a primary education only. About half the women have at least a traditional or technical secondary education. Sixty-nine percent of the women report ever being employed.

For household level variables, 48% of the women live in rural areas currently, while 50% lived in rural areas at birth. The average size of the household is 5.22 members. A quarter of the sample of women live in rural Lower Egypt and a quarter live in rural Upper Egypt. Only 14% are in the greater Cairo area. Households are fairly evenly distributed across assets/wealth categories with a fifth falling into each category. Heads of household are typically male as there are only 7% of household with female heads. Forty-five percent of the women report living with extended family. The average household size is five individuals.

Table 4L.2 shows the descriptive statistics for the sample of married women, ages 15 to 49 with spouses in the data at Wave II of the Egyptian Labor Market Panel Survey (N=5,740). The characteristics of these women are similar to the sample of ever-married women. Table 4L.3 shows the characteristics of the men married to the analytic sample of married women. On average, the husbands are 39 years old with a 7-year age difference with wives. Approximately 50% of the men have higher than a secondary education. The average difference in years of education between the husbands and their wives is 7 years. Close to 100% of men report ever working, and 96% report being employed in 2006. About 88% report permanent employment. Only 6% of men have migrated for work.

Table 4L.4 shows the summary statistics for all the study scales and outcome variables. Correlation matrices for all study scales are found in the Appendix (Tables 4A.1 – 4A.3). Figure 4.1 shows the means of autonomy measures for both ever married and married women.

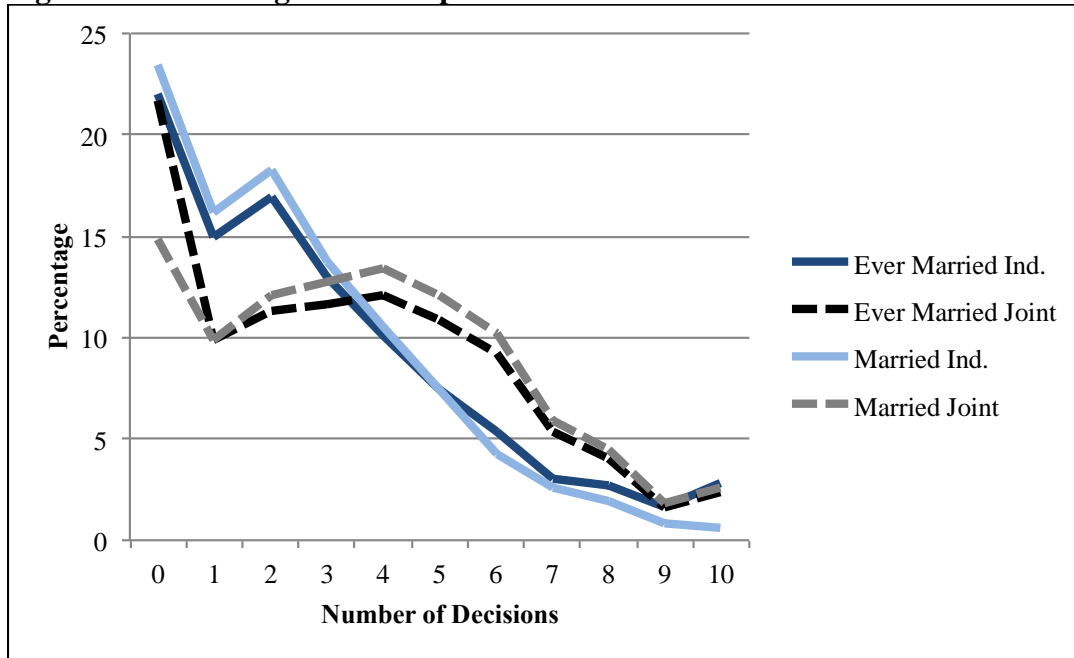
Figure 4.1 Mean Autonomy for Ever Married and Married Women in 2006



At Wave II, on average, women feel anywhere between indifferent to average to the statements regarding gender norms (Mean=3.74, SD=.556). The modal score is closer to average (3.82); however, there is significant variation and responses range from strongly disagree to strongly agree. In general, married respondents have a low amount of personal control in mobility decisions, with the average score equivalent to a response between “need permission” and “just inform them” (Mean=2.06, SD=.69) and the modal response is 2, indicating that most women need permission to go outside of the home. However, there is still variation with scores ranging from 0 to 4. Only 23% of ever-married women report having access to financial resources. For attitudes towards domestic violence, respondents have slightly negative attitudes with the average score indicating agreement that a husband is justified in beating his wife on at least a couple items since higher scores indicate a greater belief in domestic violence (Mean=1.96, SD=2.03). Nonetheless, there is still variation with scores ranging from 0 to 7.

In general, respondents have a low amount of personal power in household decisions, with the average score for respondents participating in household decisions equivalent to participating on only two to three decisions (Mean=2.83, SD=2.60). That said, there is still variation with scores ranging from 0 to 10. For respondents and somebody else participating in household decisions, there is still a low yet slightly higher amount of participation with the average score equivalent to participating in three to four decisions (Mean=3.32, SD=2.71). Table 4L.5 shows the distribution of number of household decisions, both individual and joint, for both samples of women. As expected, married women report more joint-decision making as compared to ever-married women. For both samples, zero is the modal response for individual decision-making, indicating that most women do not make individual decisions.

Figure 4.2 Percentage of Participation in Household Decisions



4.4 ELMPS 2006 Bivariate and Multivariate Model Building

Results from the ordinary least squares and logistic bivariate regression models predicting ever-married and married women's autonomy in 2006 are shown in Tables 4L.6 –

4L.9. Tables 4L.6 and 4L.7 show bivariate results for ever-married women (N=6,534) and Tables 4L.8 and 4L.9 show bivariate results for married women (N=5,740).

4.4a Ever Married Women Bivariate Results

For ever-married women, all individual and household determinants are associated with at least one measure of autonomy. Age is significantly associated with autonomy except for joint participation in decision-making (see Table 4L.6). There is a lot of variation in how education is associated with each of the autonomy. In general, a higher education is associated with more autonomy. Compared to those with a primary education, higher educated women have greater participation in joint decision-making and financial autonomy, and less positive beliefs in domestic violence. As expected, not being married is associated with greater participation in individual decision-making, greater mobility, more positive gender attitudes, less belief in domestic violence, and greater financial autonomy, but less participation in joint decision-making. Interestingly, having some dowry is associated with autonomy in varying ways as women with a dowry have less mobility, a greater belief in domestic violence, and less joint decision-making, but less individual decision-making and financial autonomy.

Table 4L.7 shows the bivariate results for all household determinants of autonomy for ever married women. Current location and region are significantly associated with autonomy across all outcomes. As expected, women in both rural and urban Upper Egypt are associated with less autonomy compared to those in greater Cairo. A larger household is associated with less participation in joint decision-making, less mobility, less favorable views toward gender norms, a greater belief in domestic violence, and less financial autonomy. Household wealth is only associated with joint decision-making, gender attitudes, domestic violence attitudes, and financial autonomy with women as part of the richest households participating in more joint

decisions, having more favorable gender views, less of a belief in domestic violence, and having more access to financial resources.

4.4b Married Women Bivariate Results

For the sample of married women (N=5,740), Table 4L.8 shows the bivariate OLS and logistic regression results for all individual determinants of autonomy, including variables related to spouses. Bivariate relationships for individual determinants and autonomy outcomes are similar as those reported for ever-married women. For the variables related to spouses, husband's age is also significantly associated with older husbands being associated with greater individual decision-making, less joint decision-making, more mobility, less positive attitudes towards gender norms, and greater financial autonomy. Women who have spouses with an intermediate or higher education participate in less individual decisions, more joint decisions, less mobility, more positive gender views, less belief in domestic violence, and have greater financial autonomy compared to women who have spouses with a primary education. Women whose spouses report having migrated are associated with more individual participation in decisions, more joint decisions, more mobility, and greater financial autonomy.

For household determinants, being an in urban area compared to a rural area is associated with greater autonomy except in terms of individual decision-making (see Table 4L.9). Again, similar to the sample of ever-married women both rural and urban Upper Egypt is associated with less autonomy compared to greater Cairo. For household wealth, being from the richest households is associated with more autonomy compared to the poorest households. Overall, across both samples, in the bivariate analyses, individual and household determinants were significant, meriting further analyses of these relationships.

4.4c Multivariate Model Building Results for Ever Married Women

Results from the multivariate model building are shown in Tables 4L.10 – 4L.15. In each of Tables 4L.10 – 4L.15, Model 6 is the multivariate model with all individual and household determinants. Model 1 includes age, Model 2 accounts for education, Model 3 builds further with the addition of all the marriage variables, Model 4 includes employment variables, Model 5 accounts for the location of birth and current region, including urban and rural distinctions, Model 6 is the final multivariate model with the addition of household wealth and household size. Table 4L.16 shows the full multivariate models with the addition of the variables related to spouses for the sample of married women. Given that the results for samples are equivalent, model building and final models are shown for the sample of ever married women and only final models are shown for the sample of married women.

4.4c.1 Individual Participation in Household Decision-Making

Model 6 (see Table 4L.10) shows that for individual participation in household decision-making, age is associated with more decision making as for each year older a woman is, she reports 0.057 more decisions ($p < 0.001$), all else held constant. Women who are not married also make 2.56 more household decisions ($p < 0.001$). For women who have reported some dowry compared to those who had no dowry, individual participation in household decisions are higher by 0.25 ($p < 0.001$). As expected for those who have ever worked compared to those who have not, make 0.27 more decisions ($p < 0.05$).

For household determinants, those who live in Alexandria compared to Cairo are associated with making fewer decisions ($p < 0.001$). Those in rural upper Egypt compared to Cairo make fewer individual decisions ($p < 0.001$). Women in both urban and rural upper Egypt make fewer household decisions as compared to women in Cairo ($p < 0.001$). For women in richer

households compared to the poorest households, individual decision-making is lower by 0.37 ($p < 0.001$). As expected, those who reside in a larger household make 0.10 less individual household decisions ($p < 0.001$). Model 6 explains 18% of the variance in individual household decision-making and has the lowest BIC (29913) indicating this model is the best fit.

4.4c.2 Joint Participation in Household Decision-Making

Model 6 (see Table 4L.11) shows that higher education is significantly associated with joint participation in household decision-making. For women with an intermediate or higher education compared to a primary education, joint participation in household decisions is higher by 0.33 ($p < 0.05$). Women with no education participate in 0.34 less joint decisions compared to women with a primary education. As expected, women who are not married also have 2.86 lower joint participation in household decision-making ($p < 0.001$). For women who have reported some dowry compared to those who did not report on their dowry values, joint participation in household decisions are lower by 0.21 ($p < 0.01$).

For household determinants, those who live in Alexandria compared to Cairo are associated with greater joint household decision-making ($p < 0.05$). However, all other regions are associated with less joint household decision-making compared to women in Cairo ($p < 0.001$). For women in wealthier households compared to the poorest households, joint participation is higher by 0.40 ($p < 0.001$). Women who live in larger household sizes also have 0.056 more joint participation in household decisions, all else constant. In terms of model fit, Model 6 explains 15% of the variance in joint decision-making and has the lowest BIC, indicating it is the best fit.

4.4c.3 Mobility

Model 6 (see Table 4L.12) shows that for mobility, age is associated with mobility as for each year older a woman is, she reports 0.0088 greater mobility ($p < 0.001$). In contrast to

decision-making, education is not associated with mobility when accounting for the remaining determinants of autonomy. Women who are not married also have 0.31 greater mobility ($p < 0.001$). Being 18 years or older at marriage is associated with less mobility ($p < 0.01$). As expected for those who have ever worked compared to those who have not, mobility is greater by 0.12 ($p < 0.001$). Having some dowry compared to having none is associated with greater mobility ($p < 0.05$). Those who live in any other region compared to Cairo are associated with less mobility ($p < 0.001$). For women in wealthier households compared to the poorest households, mobility is lower by 0.17 ($p < 0.001$). Greater household size is also associated with less mobility ($p < 0.001$). Both Models 5 and 6 (see Table 4L.12) explain 9% of the variance in women's mobility, and Model 5, which excludes household wealth and size, is supported as the best fitting model.

4.4c.4 Attitudes towards Gender Norms

Model 6 (see Table 4L.13) shows that education is significantly associated with gender-related attitudes. For example, for those who have intermediate or higher education compared to those with no education, attitudes towards gender norms are 0.27 higher ($p < 0.001$). Several aspects of marriage including being separated, the value of a dowry, and being related to one's husband are associated with gender-related attitudes. Women who are not married are associated with more positive attitudes towards gender norms compared to those who are married ($p < 0.05$). For women who have reported some dowry compared to those who reported none, gender-related attitudes are lower by 0.064 ($p < 0.001$). Women who are related to their husbands, most commonly as first cousins, have more negative gender-related attitudes ($p < 0.001$). Employment is also significantly associated with attitudes towards gender norms as women who are retired have 0.076 more negative attitudes towards gender norms ($p < 0.01$). The only household level determinant that is significantly associated with gender-related attitudes is region. Those who

live in any other region, except urban upper Egypt, compared to Cairo are associated with less favorable attitudes towards gender norms ($p < 0.001$).

4.4c.5 Attitudes towards Domestic Violence

Model 6 (see Table 4L.14) shows that higher education is significantly associated with less favorable attitudes towards domestic violence, holding all else constant. For example, for those who have intermediate or higher education compared to those with no education, attitudes towards domestic violence are 0.58 less favorable ($p < 0.001$). Women who are separated compared to those who are married also have less favorable attitudes towards domestic violence ($p < 0.001$). For those who live in rural Lower and Upper Egypt, attitudes towards domestic violence are more favorable ($p < 0.001$). Those who live in Alexandria & Suez Canal are associated with more favorable attitudes by 0.76 ($p < 0.001$). Unlike attitudes toward gender norms, household wealth is associated with domestic violence attitudes. For those in the richest households compared to those in the poorest households, domestic violence is viewed more negatively by 0.67 ($p < 0.001$). The addition of household wealth to the model reduces the coefficient for education, implying that some of the effect of education on attitudes towards domestic violence is mediated by household wealth. Eleven percent of the variation in attitudes towards domestic violence is explained by Model 6.

4.4c.6 Financial Autonomy

Model 6 (see Table 4L.15) shows the model building results for the logistic regression models of financial autonomy. Again, women with a higher education demonstrate greater autonomy. For example, for those who have intermediate or higher education compared to those with no education, have 70% greater financial autonomy ($p < 0.001$), all else held constant. Women who are separated compared to those who are married also have greater financial

autonomy ($p < 0.001$). As expected, women who have ever worked have 29% greater financial autonomy compared to women who have never worked ($p < 0.05$).

For household level determinants, region, wealth, and size are all associated with financial autonomy. Those who live Alexandria, Lower Egypt, and urban Upper Egypt have more financial autonomy compared to women in Cairo ($p < 0.001$). As expected, those in the richer households have more financial autonomy compared to those in the poorest households, holding all constant. Interestingly, those in larger households have less financial autonomy ($p < 0.001$). BIC values support Model 6 as the best fitting model (lowest BIC of 6606).

Depending on how women's autonomy is defined, there is variation in the significance of individual and household determinants. However, across all outcomes, current marital status and region in Egypt are associated with measures of autonomy.

4.4d Multivariate Models for Married Women

For married women ages 15 to 49 years in 2006 with data on spouses available ($N=5,740$), results of the final multivariate models are similar across all six outcomes (see Table 4L.16). Again, region is significantly associated with all measures of autonomy. Interestingly, being related to one's husband as compared to those who are not, is associated with less mobility and less favorable attitudes towards gender norms ($p < 0.01$). The spouse variables are largely insignificant. For each year older a woman's husband is, there is 0.025 less participation in joint decision-making. For those with spouses with an intermediate or higher education as compared to a primary education, there is less individual decision-making, more joint decision-making, less mobility, and more favorable attitudes towards gender norms ($p < 0.05$). Spouse's employment or migration are not associated with any measures of women's autonomy.

4.5 ELMPS 2006 Multilevel Models

Table 4L.17 shows the results of all multilevel OLS regression models predicting individual and joint household decision making, mobility, gender attitudes, domestic violence attitudes, and financial autonomy for ever married women, and Table 4L.18 shows the same results for married women. In multilevel analysis, the variance in the outcome measure is examined at multiple hierarchical levels. My results show that across every model, the variance in women's autonomy is due to differences between communities. Likelihood-ratio test comparing the multilevel model with a standard regression model confirms that the multilevel model is preferred. This is true across all the outcomes. Likelihood-ratio tests favored three level models; however, conceptually, there is little difference between the two level models of individuals and communities and individuals, communities, and governorates. The intraclass correlation coefficients support the two level models as the ICC's are between .104 and .200 suggesting that membership in particular communities is a determinant of women's autonomy, explaining about 10 – 20% of the variance in autonomy. There are 575 groups an average of 11 observations per group. Wald tests are significant for all models ($p < 0.001$) indicating that all determinants are jointly significant in predicting women's autonomy.

Results for joint household decision-making, gender attitudes, domestic violence attitudes, and financial autonomy indicate that higher education is associated with more autonomy, once other factors are held constant. As expected, current marital status is significantly associated with women's autonomy, holding all else constant. Yet interestingly, those who are separated have significantly higher autonomy compared to those who are married. This result is consistent with the notion that something about marriage affects women's autonomy within the household. However, as seen in Table 4L.18, the husband's characteristics were not significantly associated with women's autonomy. For both ever married and currently

married women, having some dowry compared to having none is associated with less mobility ($p < 0.001$) and a greater belief in domestic violence ($p < 0.05$).

Among the household characteristics, the current region of the household is related most consistently to women's autonomy. Since the region variable is a combination of the women's location and the urbanicity of that location, it shows that women in rural Upper Egypt are consistently associated with less autonomy compared to women in Greater Cairo, all else held constant. In fact, women in rural Upper Egypt, on average, participate in close to one less individual and joint household decision compared to women in Greater Cairo. Women in urban Upper Egypt have greater financial autonomy, but make fewer individual household decisions and have less mobility than women in Greater Cairo, all else held constant. Women in Alexandria & the Suez Canal have significantly less positive views towards domestic violence compared to women in Greater Cairo, all else constant. These women also make fewer individual household decisions as compared to women in Cairo.

Household wealth is significantly associated with household decision-making, both individual and joint decisions, mobility, gender attitudes, domestic violence attitudes, and financial autonomy (see Table 4L.17). As compared to the poorest households, women in the middle wealth households have less mobility, less favorable attitudes towards domestic violence, and more favorable attitudes gender norms. Women in the richest households also have less favorable attitudes towards domestic violence, less mobility, and more joint participation in household decision-making as compared to women in the poorest households, all else held constant. Household size is also associated with several measures of autonomy. All else held constant, those in larger households make fewer individual decisions, participate in more joint decisions, have a greater belief in domestic violence ($p < 0.05$), and have less financial autonomy

($p < 0.001$). The results in Table 4L.18 are essentially identical as the addition of the spouse variables did not change the relationships between the individual and household determinants and women's autonomy. Results for a comparison of the multilevel models for combined measure of household decision making with individual and joint household decision making can be found in the Appendix (Appendix Table 4A.4).

4.6 EDHS Sample Characteristics

Descriptive statistics for my primary EDHS-2008 analytic sample are presented in Table 4D.1. The final sample consists of 14,756 ever married women, ages 15 to 49 in 2008. The average age of sample respondents is 34 years and 93% are still married. The average age at first marriage is around 20 years old. About 34% have received no education, and about 50% have a secondary or higher education. Only 17% of the women report ever being employed. Majority of the sample is Muslim with only 5% reporting being Christian. Seventy-eight percent of the sample already has a son.

For household level variables, 59% of the women lived in rural areas at birth. About thirty percent of the women live in rural Lower Egypt and about thirty percent live in rural Upper Egypt. Only 15% are in the greater Cairo and Alexandria areas. Households are fairly evenly distributed across assets/wealth categories with a fifth falling into each category. The average household size is six individuals.

Table 4D.2 shows the summary statistics for all the study scales and outcome variables for the 2008 EDHS. In general, respondents have a low amount of personal power in household decisions, with the average score for respondents participating in household decisions equivalent to participating on only zero to one decision (Mean=0.80, SD=1.02). That said, there is still variation with scores ranging from 0 to 5. For respondents and somebody else participating in household decisions, there is still a low yet slightly higher amount of participation with the

average score equivalent to participating in two to three decisions (Mean=2.57, SD=1.81). For attitudes towards domestic violence, respondents have slightly negative attitudes with the average score indicating agreement that a husband is justified in beating his wife on at least one occasion since higher scores indicate a greater belief in domestic violence (Mean=1.21, SD=1.66). Nonetheless, there is still variation with scores ranging from 0 to 5. Table 4D.3 shows the distribution of number of household decisions, both individual and joint. Majority of women make zero individual or joint household decisions. Fifty percent make one or more individual household decisions, and eighty percent make one or more joint household decisions.

Table 4D.4 shows the summary statistics for the matching autonomy outcomes for the ELMPS and EDHS. Figure 4.3 shows the means of the matching autonomy outcomes for the ELMPS and EDHS. The matching variable for individual and joint household decision-making ranges from 0 to 4 and includes a count of who decides the woman's health care, large household purchases, daily household purchases, and visits to family and friends. Domestic violence attitudes also ranges from 0 to 4 and scale items include that a husband is justified in beating his wife if she neglects the children, argues with him, refuses sex, or burns the food. For the ELMPS, women make an average of one individual household decision (Mean=0.99, SD=0.98), and for the EDHS, women make an average of 0.83 individual household decisions (Mean=0.83, SD=0.97). Attitudes towards domestic violence are similar with women agreeing that on average men are justified in beating their wives on at least one occasion (ELMPS – Mean=0.89, SD=1.25; EDHS – Mean=0.86, SD=1.28).

Figure 4.3 Mean Autonomy by Survey

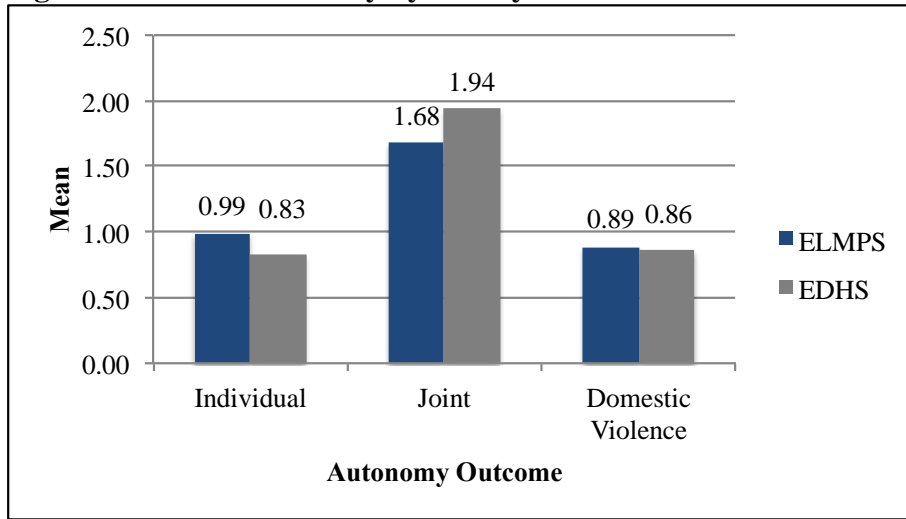
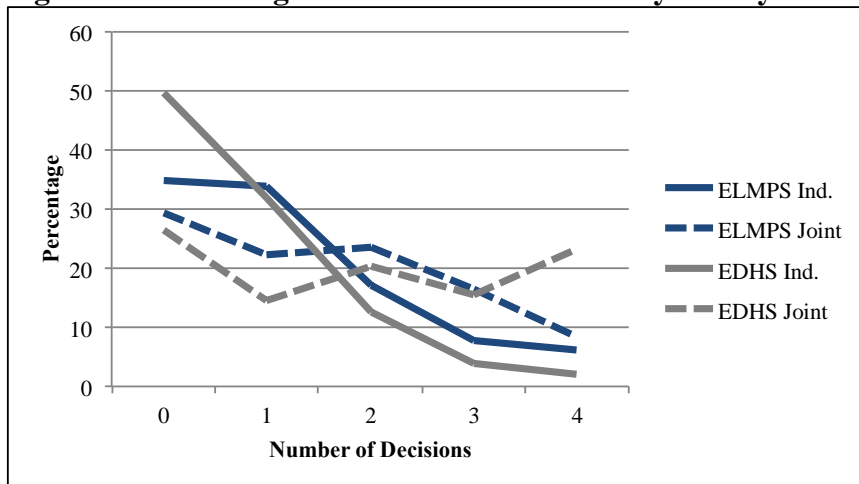


Table 4D.5 shows the distribution of household decision-making, both individual and joint, for both samples of women. Figure 4.4 shows the percentage of each type of decision by survey. For both the ELMPS and the EDHS, about twenty percent of women make two joint household decisions and 16% make three household decisions. More women in the EDHS make four joint household decisions (23%) compared to only 8% of women in the ELMPS.

Figure 4.4 Percentage of Household Decisions by Survey



4.7 EDHS Multivariate and Multilevel Models

Tables 4D.6 shows the multivariate OLS of individual decision-making, joint decision-making, and domestic violence attitudes. Since the distribution of these outcomes is similar to a

count variable, Poisson models were also checked and showed the same results as the OLS models (see Appendix Table 4A.5). Table 4D.7 shows the results of all multilevel OLS regression models predicting individual and joint household decision making and domestic violence attitudes.

Similar to the EDHS, my results show that across every model, the variance in women's autonomy is due to differences between communities. Likelihood-ratio test comparing the multilevel model with a standard regression model confirms that the multilevel model is preferred ($p < 0.001$). This is true across all the outcomes. The intraclass correlation coefficients (ICC) support the two level models as the ICC's are between .11 and .16 suggesting that membership in particular communities is a determinant of women's autonomy, explaining about 11 – 16% of the variance in autonomy. There are 1263 groups an average of 11 observations per group, with a minimum of one and a maximum of 35.

For individual participation in household decision-making, age is associated with more decisions as for each year older a woman is, she reports 0.005 more individual decisions ($p < 0.01$), all else held constant (see Table 4D.7). For each addition age, women also report more joint decision-making ($p < 0.001$). Education is associated with both joint decision-making and domestic violence attitudes. Women with an intermediate or higher education report greater participation in joint decisions and less favorable views towards domestic violence compared to women with a primary education. Christianity is associated with less favorable views towards domestic violence, all else constant ($p < 0.01$). Interestingly, women with sons participate in more individual and joint household decisions and have less favorable views towards domestic violence ($p < 0.001$).

For household determinants, as seen with the ELMPS, region is an important determinant of women's autonomy (see Table 4D.7). Those who live in urban Lower and rural Lower and Upper Egypt make fewer individual household decisions as compared to women in the Greater Cairo and Alexandria regions ($p < 0.001$). Those in Upper Egypt also have a greater belief in domestic violence compared to women in Greater Cairo and Alexandria ($p < 0.001$). Women in wealthier households, as compared to the poorest household, have less favorable views toward domestic violence ($p < 0.001$). Women in larger households make fewer individual decisions, joint decisions, and have a greater belief in domestic violence ($p < 0.001$). Results show that having a son, region, and household size consistently being associated with all measures of autonomy, and age, education, employment, and spouse's education being associated with at least two measures of autonomy.

4.8 ELMPS and EDHS Matching Outcome Models

Table 4L.19 shows the side by side comparisons of the multivariate OLS models of individual decision-making, joint decision-making, and domestic violence attitudes for the ELMPS and the EDHS. Matching Poisson models can be found in the Appendix (Appendix Table 4A.6). Table 4L.20 shows the same comparisons of the multilevel OLS models. The ICC's for this set of models are between 0.047 and 0.156 indicating that membership in a community explains about 5 to 15% of the variance in autonomy.

4.8a Individual Household Decision-Making Matching Models

For both the ELMPS and the EDHS, age is associated with more participation as for each year older a woman is, she makes more individual decisions ($p < 0.001$), all else held constant (see Table 4L.20). Both models show the association that women who have ever worked make more household decisions as compared to women who have never worked. Both models also show that women in rural Upper Egypt make fewer individual household decisions as compared to

women in Greater Cairo. Both models show that women in larger households make fewer individual household decisions ($p < 0.001$).

Despite these similarities, there are some differences. The EDHS model of individual decision-making shows that husband's age and education are significantly associated with decision-making, but the ELMPS does not support this result. The ELMPS model shows 0.64 less participation in individual household decisions for women in urban Upper Egypt as compared to Greater Cairo, but the EDHS model does not support this. In fact, while not significant, the coefficient for urban Upper Egypt is positive. The ELMPS model also shows that women in Alexandria make 0.41 fewer household decisions as compared to women in Greater Cairo ($p < 0.001$). This result cannot be compared to the EDHS because the urban governorates of Cairo and Alexandria are grouped together in the EDHS.

4.8b Joint Household Decision-Making Matching Models

For both the ELMPS and the EDHS, women who have an intermediate or higher education as compared to those with a primary education participate in more joint household decisions ($p < 0.001$), all else held constant (see Table 4L.20). Women who have ever worked participate in more joint household decisions ($p < 0.001$). Both models also show that women in larger households make less joint household decisions ($p < 0.001$). Women in the richest households as compared to the poorest households make 0.02 fewer joint decisions ($p < 0.001$). For region, both models show that women in rural and urban Upper Egypt participate in fewer joint decisions as compared to women in Greater Cairo ($p < 0.001$). There are differences for Lower Egypt with the ELMPS showing less participation in joint decisions and the EDHS showing more participation in joint decisions as compared to Greater Cairo.

4.8c Domestic Violence Attitudes Matching Models

For both the ELMPS and the EDHS, women who have an intermediate or higher education as compared to those with a primary education have less favorable attitudes towards domestic violence ($p < 0.001$), all else held constant (see Table 4L.20). Women who have spouses with no education compared to those with spouses with a primary education, have a greater belief in domestic violence ($p < 0.05$). Both models show that household wealth is a consistent predictor of attitudes towards domestic violence with women of all other wealth categories compared to the poorest women having less favorable attitudes towards domestic violence ($p < 0.001$). Women in rural Upper Egypt have more favorable attitudes towards domestic violence as compared to women in Greater Cairo ($p < 0.001$). In general, the models of determinants of domestic violence from the ELMPS and EDHS exhibit similar results.

4.9 Summary of Key Findings

This study is one of the first to describe the individual and household determinants of women's autonomy in Egypt, while accounting for community level variation for samples of ever-married and married women of reproductive age. Additionally, this research uses a range of measures to operationalize autonomy, recognizing that each captures something different about a woman's experience and two datasets to verify similar determinants of women's autonomy across sources. Hierarchical linear models indicate that membership in a particular Egyptian community is a determinant of and explains some of the variance in women's autonomy.

My first hypothesis that household factors better explain women's autonomy is supported. Across all autonomy outcomes, region of household and household wealth are consistently associated with autonomy. As expected, the women in rural Upper Egypt, rural Lower Egypt, and urban Upper Egypt have less autonomy as compared to women in the Cairo area. This is consistent with research that shows that women in Upper Egypt are significantly

worse off across most women's health outcomes (Casterline et al. 2003; Yount and Li 2010). The rural/urban differences in autonomy with women in rural areas being associated with less autonomy are also consistent with work that shows more patriarchal views in rural Egypt (Yount et al. 2000). My third hypothesis was also supported as determinants of autonomy varied across measures of autonomy. For example, only in terms of financial autonomy did women in other regions of Egypt demonstrate more autonomy than women in Greater Cairo.

Household wealth is an important determinant of women's autonomy. The wealthiest women make less individual decisions, more joint decisions, have less mobility, more financial autonomy, and less favorable views towards domestic violence. These women are most likely not doing a lot of household tasks. It is more likely that they have household help who help them coordinate household needs. Some argue that women who have the final say in household decisions might actually serve in a more traditional gender role in the family (Pallitto and O'Campo 2005). Additionally, while separating household decision-making into individual and joint decisions contextualizes who is making the decisions, the questions on household decision-making provide little insight into discussions women may have had with partners or others about those household decisions.

When comparing the ELMPS and EDHS models of individual and joint decision-making and domestic violence attitudes, my fourth hypothesis was supported and results were largely similar. Again, models show that household determinants like region, household wealth, and household size are important determinants of autonomy. As expected, women in richer households have more autonomy compared to the poorest households and women in rural Egypt and Upper Egypt have less autonomy compared to women in Greater Cairo. Interestingly, women in larger households have less autonomy. It is likely that these women live with extended

family and thus relatives and in-laws may control women's access to children, food, money, and health services (Moss 2002). The similarities in the determinants of autonomy across data sources, sampling frames, and samples implies that these measures of autonomy are reliable.

Importantly, my results show that across all outcomes, the total variance in autonomy is due to differences in communities. This supports my second hypothesis, and highlights the importance of the woman's location and social context of that location in her level of control and ability to exercise power in the household. In this chapter, I have evaluated empirical evidence for a relationship between individual and household characteristics and women's autonomy. I find support for several attributes of the household and most notably for the importance of the woman's location in her ability to exercise autonomy.

Chapter 4 Results Tables

Table 4L.1 Sample Descriptive Characteristics (Means (SE) or %) of Ever Married Women Ages 15 to 49 at Wave II, 2006 Egyptian Labor Market Panel Survey N=6,534

Key Variables	N	% or Mean (SD)
INDIVIDUAL VARIABLES		
Current Age in years		
15 - 19 yrs	269	4.12
20 - 24 yrs	1,217	18.63
25 - 29 yrs	1,342	20.54
30 - 34 yrs	1,032	15.79
35 - 39 yrs	936	14.33
40 - 44 yrs	971	14.86
45 - 49 yrs	767	11.74
Mean (SD)	6,534	32.4 (8.76)
Marital Status		
Married	6,148	94.09
Separated/Divorced/Widow	386	5.91
Age at First Marriage		
Less than 18 years	1,501	22.97
18 years or older	5,033	77.03
Mean (SD)	6,534	20.7 (4.17)
Value of Dowry		
No Response	1,727	26.43
No Amount	2,630	40.25
Some Amount	2,177	33.32
Marriage Process Duration (Months)		
	6,534	14.1 (13.5)
Related to Husband		
No	4,586	70.19
Yes	1,948	29.81
Mother's Education		
None	87	1.33
Primary	5,146	78.76
Preparatory or Higher	1,301	19.91
Education		
None	2,549	39.01
Primary	505	7.73
Preparatory	344	5.26
Secondary	72	1.1
Technical Secondary	1,973	30.2
Intermediate or Higher	1,091	16.7
Years of Education		
	6,534	7.55 (5.77)
Ever Worked		
No	4,476	68.5
Yes	2,058	31.5
Currently Employed		

Employed	1,617	24.75
Unemployed	309	4.72
Out of Labor Force	4,608	70.53
HOUSEHOLD VARIABLES		
Current Setting		
Rural	3,136	48.00
Urban	3,398	52.00
Setting of Birth		
Rural	3,287	50.31
Urban	3,247	49.69
Region		
Greater Cairo	935	14.31
Alexandria & Suez Canal	663	10.15
Urban Lower	853	13.05
Urban Upper	947	14.49
Rural Lower	1,709	26.16
Rural Upper	1,427	21.84
Household Wealth Index		
Poorest	1,118	17.11
Poorer	1,343	20.55
Middle	1,444	22.1
Richer	1,342	20.54
Richest	1,287	19.7
Household Size	6,534	5.22 (6.25)

Table 4L.2 Sample Descriptive Characteristics (Means (SE) or %) of Married Women Ages 15 to 49 w/Spouses at Wave II, 2006 Egyptian Labor Market Panel Survey N=5,740

Key Variables	N	% or Mean (SD)
INDIVIDUAL VARIABLES		
Current Age in years		
15 - 19 yrs	253	4.41
20 - 24 yrs	1,119	19.49
25 - 29 yrs	1,211	21.1
30 - 34 yrs	933	16.25
35 - 39 yrs	826	14.39
40 - 44 yrs	804	14.01
45 - 49 yrs	594	10.35
Mean (SD)	5,740	32.0 (8.62)
Age at First Marriage		
Less than 18 years	1,262	21.99
18 years or older	4,478	78.01
Mean (SD)	5,740	20.7 (4.14)
Value of Dowry		
No Response	1,519	26.46
No Amount	2,318	40.38
Some Amount	1,903	33.15
Marriage Process Duration (Months)		
	5,740	14.3 (13.5)
Related to Husband		
No	4,012	69.9
Yes	1,728	30.1
Mother's Education		
None	78	1.36
Primary	4,496	78.33
Preparatory or Higher	1,166	20.31
Education		
None	2,140	37.28
Primary	435	7.58
Preparatory	307	5.35
Secondary	68	1.18
Technical Secondary	1,785	31.1
Intermediate or Higher	1,005	17.51
Years of Education	5,740	7.77 (5.73)
Ever Worked		
No	3,982	69.37
Yes	1,758	30.63
Currently Employed		
Employed	1,365	23.79
Unemployed	265	4.62

Out of Labor Force	4,110	71.59
HOUSEHOLD VARIABLES		
Current Setting		
Rural	2,731	47.58
Urban	3,009	52.42
Setting of Birth		
Rural	2,854	49.72
Urban	2,886	50.28
Household Size		
Region		
Greater Cairo	832	14.49
Alexandria & Suez Canal	600	10.45
Urban Lower	736	12.82
Urban Upper	841	14.65
Rural Lower	1,515	26.39
Rural Upper	1,216	21.18
Household Wealth Index		
Poorest	940	16.38
Poorer	1,187	20.68
Middle	1,248	21.74
Richer	1,206	21.01
Richest	1,159	20.19
	5,740	5.26 (2.62)

Table 4L.3 Sample Descriptive Characteristics (Means (SE) or %) of Married Women's Husbands at Wave II, 2006 Egyptian Labor Market Panel Survey N=5,740

Key Variables	N	% or Mean (SD)
INDIVIDUAL VARIABLES		
Current Age in years		
15 - 19 yrs	11	0.19
20 - 24 yrs	239	4.16
25 - 29 yrs	878	15.3
30 - 34 yrs	1,116	19.44
35 - 39 yrs	921	16.05
40 - 44 yrs	879	15.31
45 - 49 yrs	778	13.55
50 or older	918	15.99
Mean (SD)	5,740	38.7 (9.76)
Difference in Age	5,740	6.87 (4.73)
Education		
None	1,722	30
Primary	656	11.43
Preparatory	311	5.42
Secondary	50	0.87
Technical Secondary	1,690	29.44
Intermediate or Higher	1,311	22.84
Years of Education	5,740	9.06 (5.49)
Difference in Years of Education	5,740	3.03 (3.36)
Ever Worked		
No	22	0.38
Yes	5,718	99.62
Currently Employed		
Employed	5,501	95.84
Unemployed	60	1.05
Out of Labor Force	179	3.12
Migration		
No Response	1,101	19.18
No	4,294	74.81
Yes	345	6.01

Table 4L.4 Summary Statistics: Primary Study Scales and Outcomes of Autonomy for Women 15 to 49 years old at Wave II, 2006 Egyptian Labor Market Panel Survey

Key Scales	Ever-Married Women N=6,534				Married Women N=5,790			
	N	Range	Mode	% or Mean (SD)	N	Range	Mode	% or Mean (SD)
AUTONOMY								
Household Decision-Making								
Individual Participation in Decisions	6,534	0 - 10	0.00	2.83 (2.60)	5,740	0 - 10	0.00	2.47 (2.23)
Joint Participation in Decisions	6,534	0 - 10	0.00	3.32 (2.71)	5,740	0 - 10	0.00	3.67 (2.63)
Mobility	6,534	0 - 4	2.00	2.11 (0.75)	5,740	0 - 4	2.00	2.06 (0.69)
Financial Autonomy	6,534	0 - 1	-	0.23 (0.42)	5,740	0 - 1	-	0.22 (0.41)
Gender Role Attitudes	6,534	1 - 5	3.82	3.74 (0.56)	5,740	1 - 5	3.82	3.74 (0.56)
Domestic Violence Attitudes	6,534	0 - 7	1.00	1.96 (2.03)	5,740	0 - 7	1.00	1.98 (2.04)

Table 4L.5 Distribution of Household Decisions for Women ages 15 to 49 at Wave II, 2006 Egyptian Labor Market Panel Survey

Count	Ever-Married N=6,534				Married N=5,740			
	Individual		Joint		Individual		Joint	
	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent
0	1,440	22.04	1,414	21.64	1,351	23.5	854	14.9
1	977	14.95	649	9.93	927	16.2	564	9.83
2	1,107	16.94	738	11.29	1,052	18.3	696	12.1
3	849	12.99	763	11.68	785	13.7	729	12.7
4	658	10.07	791	12.11	607	10.6	767	13.4
5	484	7.41	711	10.88	427	7.44	693	12.1
6	351	5.37	600	9.18	242	4.22	584	10.2
7	201	3.08	347	5.31	152	2.65	342	5.96
8	175	2.68	262	4.01	113	1.97	256	4.46
9	108	1.65	106	1.62	50	0.87	105	1.83
10	184	2.82	153	2.34	34	0.59	150	2.61

Table 4L.6 OLS and Logistic Bivariate Regression Models Predicting Women's Autonomy of Ever Married Women Ages 15 to 49 at Wave II, 2006 Egyptian Labor Market Panel Survey

Key Variables	Individual Decision-Making N=6,534		Joint Decision-Making N=6,534		Mobility N=6,534		Gender Attitudes N=6,534		Domestic Violence Attitudes N=6,534		Financial Autonomy N=6,534		
	OLS											Logistic	
	b	(SE)	b	(SE)	b	(SE)	b	(SE)	b	(SE)	OR	(SE)	
Age (yrs)	0.075***	(0.0035)	-0.030***	(0.0038)	0.013***	(0.0010)	-0.00086	(0.00078)	-0.0062*	(0.0029)	1.02***	(0.0034)	
Education (Ref=Primary)													
None	0.31*	(0.13)	-0.66***	(0.13)	0.038	(0.036)	-0.015	(0.026)	0.35***	(0.096)	0.77*	(0.099)	
Preparatory	0.0065	(0.18)	0.15	(0.18)	-0.013	(0.052)	0.075*	(0.038)	-0.12	(0.14)	1.32	(0.23)	
Secondary	-0.71*	(0.33)	0.96**	(0.33)	-0.26**	(0.094)	0.23***	(0.068)	-0.66**	(0.25)	2.11**	(0.59)	
Technical Secondary	-0.010	(0.13)	0.32*	(0.13)	0.020	(0.037)	0.21***	(0.027)	-0.34***	(0.099)	1.50**	(0.19)	
Intermediate or Higher	-0.10	(0.14)	0.97***	(0.14)	-0.024	(0.040)	0.35***	(0.029)	-0.90***	(0.11)	3.02***	(0.39)	
Mother's Education (Ref=Primary)													
None	-0.33	(0.28)	1.41***	(0.29)	-0.16*	(0.081)	0.33***	(0.060)	-1.33***	(0.22)	4.17***	(0.91)	
Preparatory or Higher	-0.29***	(0.080)	0.97***	(0.083)	-0.11***	(0.023)	0.15***	(0.017)	-0.66***	(0.062)	1.75***	(0.12)	
Separated (Ref=Married)	3.16***	(0.13)	-3.15***	(0.14)	0.43***	(0.039)	0.077**	(0.029)	-0.23*	(0.11)	1.70***	(0.19)	
Older than 18 at First Marriage													
None	-0.10	(0.076)	0.71***	(0.079)	-0.010	(0.022)	0.15***	(0.016)	-0.64***	(0.059)	1.75***	(0.14)	
Dowry (Ref=None)													
No Response	0.58***	(0.080)	-0.18*	(0.084)	0.11***	(0.023)	0.045**	(0.017)	-0.12	(0.063)	1.08	(0.078)	
Some	0.38***	(0.075)	-0.48***	(0.078)	0.060**	(0.022)	-0.13***	(0.016)	0.15**	(0.059)	0.83**	(0.058)	
Marriage Process Duration (Months) Related to Husband (Ref=No)													
Ever Worked	0.0027	(0.0024)	0.016***	(0.0025)	0.0015*	(0.00069)	0.00065	(0.00051)	-0.0042*	(0.0019)	1.00	(0.0022)	
Employment (Ref=Employed)													
Unemployed	0.33***	(0.070)	0.046	(0.073)	0.10***	(0.020)	0.089***	(0.015)	-0.28***	(0.055)	1.35***	(0.090)	
Retired	0.41***	(0.069)	0.29***	(0.072)	0.14***	(0.020)	0.13***	(0.015)	-0.068	(0.054)	1.86***	(0.11)	
Unemployed	-0.36*	(0.16)	0.38*	(0.17)	-0.13**	(0.046)	0.11***	(0.034)	0.12	(0.13)	0.43***	(0.069)	
Retired	-0.49***	(0.075)	-0.22**	(0.078)	-0.15***	(0.021)	-0.16***	(0.016)	0.038	(0.059)	0.52***	(0.033)	

Notes: *p<0.05, ** p<0.01, *** p<0.001. Standard errors in parentheses

Table 4L.7 OLS and Logistic Bivariate Regression Models Predicting Women's Autonomy of Ever Married Women Ages 15 to 49 at Wave II, 2006 Egyptian Labor Market Panel Survey

Key Variables	Individual Decision-Making N=6,534		Joint Decision-Making N=6,534		Mobility N=6,534		Gender Attitudes N=6,534		Domestic Violence Attitudes N=6,534		Financial Autonomy N=6,534	
	OLS											
	b	(SE)	b	(SE)	b	(SE)	b	(SE)	b	(SE)	OR	(SE)
Current Location: Urban	0.15*	(0.064)	0.82***	(0.066)	0.061**	(0.018)	0.15***	(0.014)	-0.85***	(0.049)	1.64***	(0.099)
Birth Setting: Urban	0.11	(0.064)	0.75***	(0.066)	0.043*	(0.018)	0.13***	(0.014)	-0.74***	(0.049)	1.72***	(0.10)
Household Size	0.027	(0.014)	-0.060***	(0.015)	0.0075	(0.0041)	-0.024***	(0.0031)	0.089***	(0.011)	0.92***	(0.013)
Region (Ref=Greater Cairo)												
Alexandria & Suez Canal	-0.69***	(0.13)	0.31*	(0.13)	-0.18***	(0.037)	-0.11***	(0.028)	-0.69***	(0.099)	1.20	(0.14)
Urban Lower	0.29*	(0.12)	-1.12***	(0.13)	0.019	(0.035)	-0.11***	(0.026)	0.27**	(0.093)	1.29*	(0.14)
Urban Upper	-1.00***	(0.12)	-0.33**	(0.12)	-0.31***	(0.034)	-0.0039	(0.025)	0.33***	(0.090)	1.06	(0.11)
Rural Lower	0.031	(0.10)	-1.17***	(0.11)	-0.038	(0.030)	-0.19***	(0.022)	0.63***	(0.080)	0.93	(0.088)
Rural Upper	-1.12***	(0.11)	-1.09***	(0.11)	-0.34***	(0.031)	-0.21***	(0.023)	1.17***	(0.082)	0.43***	(0.048)
Household Wealth Index (Ref=Poorest)												
Poorer	-0.036	(0.11)	0.22*	(0.11)	-0.025	(0.030)	0.047*	(0.022)	-0.46***	(0.080)	1.61***	(0.20)
Middle	0.16	(0.10)	0.37***	(0.11)	0.012	(0.030)	0.12***	(0.022)	-0.75***	(0.078)	2.56***	(0.31)
Richer	-0.10	(0.11)	0.97***	(0.11)	-0.015	(0.030)	0.17***	(0.022)	-1.08***	(0.080)	3.59***	(0.42)
Richest	-0.0055	(0.11)	1.41***	(0.11)	-0.046	(0.031)	0.24***	(0.022)	-1.49***	(0.080)	6.20***	(0.72)

Notes: *p<0.05, ** p<0.01, *** p<0.001. Standard errors in parentheses

Table 4L.8 OLS and Logistic Bivariate Regression Models Predicting Women's Autonomy of Married Women Ages 15 to 49 at Wave II, 2006 Egyptian Labor Market Panel Survey

Key Variables	Individual Decision-Making N=5,740		Joint Decision-Making N=5,740		Mobility N=5,740		Gender Attitudes N=5,740		Domestic Violence Attitudes N=5,740		Financial Autonomy N=5,740	
	OLS										Logistic	
	b	(SE)	b	(SE)	b	(SE)	b	(SE)	b	(SE)	OR	(SE)
Age (yrs)	0.054***	(0.0033)	-0.011**	(0.0040)	0.010***	(0.0010)	-0.0011	(0.00086)	-0.0034	(0.0031)	1.02***	(0.0037)
Education (Ref=Primary)												
None	0.19	(0.12)	-0.60***	(0.14)	0.0034	(0.036)	-0.029	(0.028)	0.35***	(0.10)	0.64**	(0.092)
Preparatory	0.0075	(0.17)	0.14	(0.19)	-0.0026	(0.051)	0.066	(0.040)	-0.13	(0.15)	1.22	(0.23)
Secondary	-0.64*	(0.29)	0.90**	(0.34)	-0.28**	(0.089)	0.26***	(0.070)	-0.69**	(0.26)	2.11*	(0.61)
Technical Secondary	0.070	(0.12)	0.28*	(0.14)	0.015	(0.037)	0.22***	(0.029)	-0.42***	(0.11)	1.49**	(0.21)
Intermediate or Higher	-0.061	(0.13)	0.97***	(0.15)	-0.035	(0.039)	0.35***	(0.031)	-0.97***	(0.11)	3.17***	(0.45)
Mother's Education (Ref=Primary)												
None	-0.54*	(0.25)	1.59***	(0.30)	-0.21**	(0.078)	0.36***	(0.063)	-1.37***	(0.23)	5.27***	(1.22)
Preparatory or Higher	-0.26***	(0.073)	1.01***	(0.085)	-0.11***	(0.022)	0.16***	(0.018)	-0.69***	(0.066)	1.89***	(0.14)
Older than 18 at First Marriage	0.014	(0.071)	0.65***	(0.084)	-0.011	(0.022)	0.16***	(0.018)	-0.68***	(0.064)	2.09***	(0.19)
Dowry (Ref=None)												
No Response	0.55***	(0.073)	-0.16	(0.087)	0.10***	(0.023)	0.045*	(0.018)	-0.11	(0.067)	1.14	(0.088)
Some	0.37***	(0.069)	-0.51***	(0.081)	0.066**	(0.021)	-0.14***	(0.017)	0.16**	(0.063)	0.81**	(0.062)
Marriage Process Duration (Months)	0.0036	(0.0022)	0.014***	(0.0026)	0.0011	(0.00067)	0.00089	(0.00055)	-0.0042*	(0.0020)	1.00	(0.0024)
Related to Husband (Ref=No)												
No Response	0.31***	(0.064)	0.11	(0.076)	0.10***	(0.020)	0.083***	(0.016)	-0.27***	(0.059)	1.48***	(0.11)
Yes	0.24***	(0.064)	0.48***	(0.075)	0.11***	(0.020)	0.13***	(0.016)	-0.091	(0.058)	2.04***	(0.14)
Employment (Ref=Employed)												
Unemployed	-0.34*	(0.15)	0.29	(0.18)	-0.12**	(0.046)	0.13***	(0.037)	0.094	(0.14)	0.34***	(0.064)
Out of Labor Force	-0.26***	(0.070)	-0.43***	(0.082)	-0.11***	(0.021)	-0.16***	(0.017)	0.041	(0.064)	0.47***	(0.033)
Husband's Age (yrs)	0.042***	(0.0030)	-0.017***	(0.0036)	0.0066***	(0.00093)	-0.0023**	(0.00076)	-0.00070	(0.0028)	1.01***	(0.0033)
Husband's Education (Ref=Primary)												
None	0.14	(0.10)	-0.42***	(0.12)	-0.017	(0.031)	-0.034	(0.025)	0.49***	(0.091)	0.74*	(0.095)
Preparatory	0.089	(0.15)	0.33	(0.18)	-0.028	(0.047)	0.078*	(0.038)	-0.35**	(0.14)	1.25	(0.22)
Secondary	0.054	(0.33)	0.42	(0.38)	-0.098	(0.10)	0.20*	(0.080)	-0.43	(0.29)	2.88***	(0.90)
Technical Secondary	-0.10	(0.10)	0.36**	(0.12)	-0.064*	(0.032)	0.16***	(0.025)	-0.26**	(0.091)	1.46**	(0.18)
Intermediate or Higher	-0.25*	(0.11)	1.01***	(0.12)	-0.10**	(0.033)	0.27***	(0.026)	-0.77***	(0.095)	2.86***	(0.34)
Husband's Employment (Ref=Employed)												
Unemployed	-0.46	(0.29)	0.34	(0.34)	-0.043	(0.089)	0.031	(0.073)	0.025	(0.26)	0.55	(0.21)
Out of Labor Force	0.29	(0.17)	-0.46*	(0.20)	0.091	(0.052)	-0.014	(0.043)	0.12	(0.15)	0.90	(0.17)
Husband's Migration (Ref=No)												
No Response	0.16*	(0.075)	0.84***	(0.088)	0.052*	(0.023)	0.094***	(0.019)	-0.76***	(0.068)	1.44***	(0.11)
Yes	0.57***	(0.12)	0.32*	(0.15)	0.10**	(0.038)	0.047	(0.031)	-0.096	(0.11)	1.59***	(0.20)

Table 4L.9 OLS and Logistic Bivariate Regression Models Predicting Women's Autonomy of Married Women Ages 15 to 49 at Wave II, 2006 Egyptian Labor Market Panel Survey

Key Variables	Individual Decision-Making N=5,740		Joint Decision-Making N=5,740		Mobility N=5,740		Gender Attitudes N=5,740		Domestic Violence Attitudes N=5,740		Financial Autonomy N=5,740	
	OLS											
	b	(SE)	b	(SE)	b	(SE)	b	(SE)	b	(SE)	OR	(SE)
Current Location: Urban	0.080	(0.059)	0.92***	(0.069)	0.044*	(0.018)	0.15***	(0.015)	-0.86***	(0.053)	1.76***	(0.12)
Birth Setting: Urban	0.086	(0.059)	0.81***	(0.069)	0.031	(0.018)	0.14***	(0.015)	-0.75***	(0.053)	1.79***	(0.12)
Household Size	0.057***	(0.013)	-0.089***	(0.016)	0.014***	(0.0040)	-0.026***	(0.0033)	0.089***	(0.012)	0.92***	(0.014)
Region (Ref=Greater Cairo)												
Alexandria & Suez Canal	-0.67***	(0.12)	0.26	(0.14)	-0.21***	(0.036)	-0.094**	(0.030)	-0.70***	(0.11)	1.17	(0.14)
Urban Lower	0.22*	(0.11)	-1.18***	(0.13)	-0.019	(0.034)	-0.098***	(0.028)	0.26**	(0.100)	1.17	(0.13)
Urban Upper	-1.06***	(0.11)	-0.35**	(0.13)	-0.32***	(0.033)	0.019	(0.027)	0.29**	(0.096)	0.95	(0.11)
Rural Lower	0.093	(0.093)	-1.31***	(0.11)	-0.049	(0.029)	-0.17***	(0.024)	0.62***	(0.085)	0.84	(0.085)
Rural Upper	-1.14***	(0.097)	-1.17***	(0.12)	-0.35***	(0.030)	-0.21***	(0.025)	1.16***	(0.089)	0.34***	(0.042)
Household Wealth Index (Ref=Poorest)												
Poorer	0.055	(0.097)	0.13	(0.11)	-0.017	(0.030)	0.055*	(0.024)	-0.54***	(0.086)	1.92***	(0.30)
Middle	0.17	(0.096)	0.37**	(0.11)	0.00057	(0.030)	0.15***	(0.024)	-0.80***	(0.085)	3.37***	(0.49)
Richer	0.014	(0.097)	0.92***	(0.11)	-0.0051	(0.030)	0.19***	(0.024)	-1.19***	(0.086)	4.85***	(0.69)
Richest	0.022	(0.098)	1.39***	(0.11)	-0.036	(0.030)	0.25***	(0.024)	-1.56***	(0.087)	8.59***	(1.21)

Notes: *p<0.05, ** p<0.01, *** p<0.001. Standard errors in parentheses

Table 4L.10 Betas and Standard Errors from Ordinary Least Squares Regression Models Predicting Women's Autonomy: Household Decision-Making (0 - 10, higher values = more decision making) of Ever Married Women Ages 15 to 49 at Wave II, 2006 Egyptian Labor Market Panel Survey N=6,534

Key Variables	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6	
	b	(SE)	b	(SE)	b	(SE)	b	(SE)	b	(SE)	b	(SE)
Age (yrs)	0.075***	(0.0035)	0.075***	(0.0037)	0.059***	(0.0036)	0.058***	(0.0037)	0.051***	(0.0038)	0.057***	(0.0039)
Education (Ref=Primary)												
None			0.027	(0.12)	0.11	(0.12)	0.099	(0.12)	0.15	(0.12)	0.12	(0.12)
Preparatory			0.021	(0.18)	0.13	(0.17)	0.14	(0.17)	0.21	(0.17)	0.21	(0.16)
Secondary			-0.54	(0.32)	-0.41	(0.31)	-0.40	(0.31)	-0.29	(0.30)	-0.27	(0.30)
Technical Secondary			0.12	(0.13)	0.20	(0.12)	0.15	(0.12)	0.10	(0.12)	0.087	(0.12)
Intermediate or Higher			-0.11	(0.14)	0.044	(0.14)	-0.037	(0.14)	-0.097	(0.14)	-0.12	(0.14)
Mother's Education (Ref=Primary)												
None			0.057	(0.28)	-0.11	(0.27)	-0.12	(0.27)	-0.093	(0.27)	-0.11	(0.27)
Preparatory or Higher			-0.17*	(0.086)	-0.22**	(0.083)	-0.22**	(0.083)	-0.22**	(0.082)	-0.22**	(0.083)
Separated (Ref=Married)					2.73***	(0.13)	2.70***	(0.13)	2.67***	(0.13)	2.56***	(0.13)
Older than 18 at First Marriage					-0.016	(0.079)	-0.016	(0.079)	-0.16*	(0.078)	-0.20*	(0.078)
Dowry (Ref=None)												
No Response					0.48***	(0.075)	0.48***	(0.075)	0.29***	(0.078)	0.31***	(0.078)
Some					0.18**	(0.071)	0.18**	(0.071)	0.25***	(0.072)	0.25***	(0.071)
Marriage Process Duration (Months)					0.0078***	(0.0023)	0.0079***	(0.0023)	0.0051*	(0.0022)	0.0051*	(0.0022)
Related to Husband (Ref=No)					0.31***	(0.067)	0.31***	(0.067)	0.11	(0.067)	0.083	(0.066)
Ever Worked							0.11	(0.12)	0.30*	(0.12)	0.27*	(0.12)
Employment (Ref=Employed)												
Unemployed							0.29	(0.19)	0.27	(0.19)	0.23	(0.18)
Retired							-0.057	(0.13)	-0.058	(0.13)	-0.11	(0.13)
Birth Setting: Urban									0.0018	(0.094)	0.0013	(0.093)
Region (Ref=Greater Cairo)												
Alexandria & Suez Canal									-0.74***	(0.12)	-0.76***	(0.12)
Urban Lower									0.21	(0.12)	0.18	(0.12)
Urban Upper									-0.98***	(0.11)	-0.98***	(0.11)
Rural Lower									0.050	(0.12)	0.086	(0.12)
Rural Upper									-1.11***	(0.13)	-1.02***	(0.13)
Household Wealth Index (Ref=Poorest)												
Poorer											-0.13	(0.098)
Middle											-0.068	(0.10)
Richer											-0.37***	(0.11)
Richest											-0.26*	(0.12)
Household Size											-0.10***	(0.012)
R-squared	0.064		0.066		0.134		0.135		0.172		0.183	
BIC	30597.2		30642.0		30202.1		30194.0		29958.0		29913.0	
F	445.1		57.8		72.1		59.7		58.8		52.1	
df_m	1		8		14		17		23		28	
df_r	6532		6525		6519		6511		6505		6500	

Notes: *p<0.05, ** p<0.01, *** p<0.001. Standard errors in parentheses

Table 4L.11 Betas and Standard Errors from Ordinary Least Squares Regression Models Predicting Women's Autonomy: Joint Household Decision-Making (0 - 10, higher values = more decision making) of Ever Married Women Ages 15 to 49 at Wave II, 2006 Egyptian Labor Market Panel Survey N=6,534

Key Variables	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6	
	b	(SE)	b	(SE)	b	(SE)	b	(SE)	b	(SE)	b	(SE)
Age (yrs)	-0.030***	(0.0038)	-0.018***	(0.0038)	-0.0020	(0.0038)	-0.0043	(0.0039)	-0.012**	(0.0040)	-0.018***	(0.0041)
Education (Ref=Primary)												
None			-0.56***	(0.13)	-0.53***	(0.13)	-0.54***	(0.13)	-0.37**	(0.12)	-0.34**	(0.13)
Preparatory			0.13	(0.18)	0.068	(0.18)	0.072	(0.18)	0.0039	(0.18)	-0.013	(0.17)
Secondary			0.75*	(0.33)	0.55	(0.32)	0.57	(0.32)	0.41	(0.32)	0.32	(0.32)
Technical Secondary			0.24	(0.13)	0.10	(0.13)	0.060	(0.13)	0.11	(0.13)	0.087	(0.13)
Intermediate or Higher			0.78***	(0.15)	0.57***	(0.15)	0.48**	(0.15)	0.40**	(0.15)	0.33*	(0.15)
Mother's Education (Ref=Primary)												
None			0.50	(0.30)	0.68*	(0.29)	0.68*	(0.29)	0.37	(0.28)	0.28	(0.28)
Preparatory or Higher			0.46***	(0.090)	0.48***	(0.087)	0.48***	(0.087)	0.34***	(0.086)	0.29***	(0.088)
Separated (Ref=Married)					-2.88***	(0.14)	-2.91***	(0.14)	-2.94***	(0.14)	-2.86***	(0.14)
Older than 18 at First Marriage					0.097	(0.083)	0.10	(0.083)	0.061	(0.083)	0.080	(0.083)
Dowry (Ref=None)												
No Response					-0.21**	(0.079)	-0.21**	(0.079)	-0.11	(0.082)	-0.11	(0.082)
Some					-0.28***	(0.075)	-0.28***	(0.075)	-0.21**	(0.076)	-0.21**	(0.076)
Marriage Process Duration (Months)					0.0073**	(0.0024)	0.0073**	(0.0024)	0.0057*	(0.0024)	0.0057*	(0.0024)
Related to Husband (Ref=No)					-0.086	(0.070)	-0.087	(0.070)	-0.084	(0.071)	-0.068	(0.070)
Ever Worked							0.30*	(0.13)	0.14	(0.13)	0.16	(0.13)
Employment (Ref=Employed)												
Unemployed							0.15	(0.20)	0.16	(0.20)	0.20	(0.20)
Retired							0.042	(0.14)	-0.16	(0.14)	-0.13	(0.14)
Birth Setting: Urban									0.095	(0.099)	0.089	(0.099)
Region (Ref=Greater Cairo)												
Alexandria & Suez Canal									0.28*	(0.13)	0.31*	(0.13)
Urban Lower									-1.04***	(0.12)	-0.98***	(0.12)
Urban Upper									-0.28*	(0.12)	-0.25*	(0.12)
Rural Lower									-0.90***	(0.13)	-0.86***	(0.13)
Rural Upper									-0.70***	(0.14)	-0.70***	(0.14)
Household Wealth Index (Ref=Poorest)												
Poorer											0.010	(0.10)
Middle											-0.0076	(0.11)
Richer											0.26*	(0.12)
Richest											0.40**	(0.13)
Household Size											0.056***	(0.013)
R-squared	0.009		0.057		0.122		0.124		0.149		0.154	
BIC	31502.5		31239.6		30826.2		30816.4		30678.2		30682.7	
F	62.0		49.6		64.9		54.0		49.5		42.3	
df_m	1		8		14		17		23		28	
df_r	6532		6525		6519		6511		6505		6500	

Notes: *p<0.05, ** p<0.01, *** p<0.001. Standard errors in parentheses

Table 4L.12 Betas and Standard Errors from Ordinary Least Squares Regression Models Predicting Women's Autonomy: Mobility (0 - 4, higher values = greater mobility) of Ever Married Women Ages 15 to 49 at Wave II, 2006 Egyptian Labor Market Panel Survey N=6,534

Key Variables	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6	
	b	(SE)	b	(SE)	b	(SE)	b	(SE)	b	(SE)	b	(SE)
Age (yrs)	0.013***	(0.0010)	0.013***	(0.0011)	0.011***	(0.0011)	0.010***	(0.0011)	0.0074***	(0.0011)	0.0088***	(0.0012)
Education (Ref=Primary)												
None			-0.017	(0.036)	0.0030	(0.036)	-0.0042	(0.036)	0.023	(0.036)	0.000061	(0.036)
Preparatory			-0.0066	(0.051)	0.016	(0.051)	0.016	(0.051)	0.033	(0.050)	0.039	(0.050)
Secondary			-0.20*	(0.093)	-0.19*	(0.093)	-0.18	(0.092)	-0.16	(0.091)	-0.13	(0.091)
Technical Secondary			0.052	(0.037)	0.062	(0.037)	0.041	(0.037)	0.031	(0.037)	0.045	(0.037)
Intermediate or Higher			0.011	(0.041)	0.030	(0.042)	-0.013	(0.043)	-0.036	(0.042)	-0.0062	(0.043)
Mother's Education (Ref=Primary)												
None			-0.12	(0.083)	-0.14	(0.082)	-0.15	(0.082)	-0.16*	(0.081)	-0.14	(0.081)
Preparatory or Higher			-0.10***	(0.025)	-0.11***	(0.025)	-0.12***	(0.025)	-0.13***	(0.025)	-0.12***	(0.025)
Separated (Ref=Married)					0.35***	(0.039)	0.34***	(0.039)	0.33***	(0.039)	0.31***	(0.039)
Older than 18 at First Marriage					-0.015	(0.024)	-0.014	(0.024)	-0.061*	(0.024)	-0.063**	(0.024)
Dowry (Ref=None)												
No Response					0.091***	(0.023)	0.091***	(0.023)	0.038	(0.024)	0.036	(0.024)
Some					0.024	(0.022)	0.023	(0.021)	0.046*	(0.022)	0.045*	(0.022)
Marriage Process Duration (Months)					0.0024***	(0.008)	0.0025***	(0.008)	0.0015*	(0.008)	0.0015*	(0.008)
Related to Husband (Ref=No)					-0.11***	(0.020)	-0.11***	(0.020)	-0.046*	(0.020)	-0.041*	(0.020)
Ever Worked							0.086*	(0.036)	0.13***	(0.036)	0.12***	(0.036)
Employment (Ref=Employed)												
Unemployed							0.026	(0.057)	0.021	(0.056)	0.0064	(0.056)
Retired							-0.025	(0.040)	-0.041	(0.039)	-0.047	(0.039)
Birth Setting: Urban									0.00090	(0.028)	0.0067	(0.028)
Region (Ref=Greater Cairo)												
Alexandria & Suez Canal									-0.19***	(0.038)	-0.20***	(0.038)
Urban Lower									-0.0090	(0.035)	-0.021	(0.035)
Urban Upper									-0.33***	(0.034)	-0.35***	(0.034)
Rural Lower									-0.059	(0.036)	-0.075*	(0.037)
Rural Upper									-0.39***	(0.039)	-0.42***	(0.040)
Household Wealth Index (Ref=Poorest)												
Poorer											-0.080**	(0.030)
Middle											-0.090**	(0.031)
Richer											-0.14***	(0.034)
Richest											-0.17***	(0.037)
Household Size											-0.0082*	(0.0037)
R-squared	0.023		0.029		0.048		0.053		0.089		0.094	
BIC	14578.8		14606.4		14524.9		14509.4		14304.4		14317.0	
F	157.0		23.9		23.6		21.2		27.7		24.0	
df_m	1		8		14		17		23		28	
df_r	6532		6525		6519		6511		6505		6500	

Notes: *p<0.05, ** p<0.01, *** p<0.001. Standard errors in parentheses

Table 4L.13 Betas and Standard Errors from Ordinary Least Squares Regression Models Predicting Women's Autonomy: Gender Attitudes (1 - 5, higher values = more positive attitudes) of Ever Married Women Ages 15 to 49 at Wave II, 2006 Egyptian Labor Market Panel Survey N=6,534

Key Variables	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6	
	b	(SE)	b	(SE)	b	(SE)	b	(SE)	b	(SE)	b	(SE)
Age (yrs)	-0.00086	(0.00078)			0.0016*	(0.00080)			0.00022	(0.00084)	0.00029	(0.00087)
Education (Ref=Primary)												
None			-0.021	(0.026)	-0.0080	(0.026)	-0.013	(0.026)	-0.0085	(0.026)	-0.0028	(0.027)
Preparatory			0.074*	(0.038)	0.085*	(0.037)	0.088*	(0.037)	0.080*	(0.037)	0.079*	(0.037)
Secondary			0.22**	(0.068)	0.22**	(0.068)	0.23***	(0.068)	0.22***	(0.067)	0.22**	(0.068)
Technical Secondary			0.21***	(0.027)	0.21***	(0.027)	0.18***	(0.027)	0.18***	(0.027)	0.17***	(0.027)
Intermediate or Higher			0.34***	(0.030)	0.33***	(0.031)	0.29***	(0.031)	0.27***	(0.031)	0.27***	(0.032)
Mother's Education (Ref=Primary)												
None			0.10	(0.060)	0.085	(0.060)	0.083	(0.060)	0.045	(0.060)	0.048	(0.060)
Preparatory or Higher			0.015	(0.018)	0.012	(0.018)	0.012	(0.018)	0.0067	(0.018)	0.0074	(0.019)
Separated (Ref=Married)					0.13***	(0.029)	0.11***	(0.029)	0.11***	(0.029)	0.11***	(0.029)
Older than 18 at First Marriage					0.0056	(0.017)	0.0087	(0.017)	0.014	(0.018)	0.013	(0.018)
Dowry (Ref=None)												
No Response					0.039*	(0.017)	0.039*	(0.017)	0.079***	(0.017)	0.081***	(0.017)
Some					-0.088***	(0.016)	-0.088***	(0.016)	-0.066***	(0.016)	-0.064***	(0.016)
Marriage Process Duration (Months)					-0.00039	(0.00050)	-0.00033	(0.00050)	-0.000072	(0.00050)	-0.000096	(0.00050)
Related to Husband (Ref=No)					-0.042**	(0.015)	-0.043**	(0.015)	-0.054***	(0.015)	-0.054***	(0.015)
Ever Worked							0.035	(0.027)	0.026	(0.027)	0.028	(0.027)
Employment (Ref=Employed)												
Unemployed							0.068	(0.042)	0.072	(0.042)	0.073	(0.042)
Retired							-0.068*	(0.029)	-0.075**	(0.029)	-0.076**	(0.029)
Birth Setting: Urban									-0.014	(0.021)	-0.016	(0.021)
Region (Ref=Greater Cairo)												
Alexandria & Suez Canal									-0.11***	(0.028)	-0.12***	(0.028)
Urban Lower									-0.11***	(0.026)	-0.11***	(0.026)
Urban Upper									0.031	(0.025)	0.036	(0.025)
Rural Lower									-0.14***	(0.027)	-0.14***	(0.027)
Rural Upper									-0.086**	(0.029)	-0.075*	(0.030)
Household Wealth Index (Ref=Poorest)											0.017	(0.022)
Poorer											0.051*	(0.023)
Middle											0.032	(0.025)
Richer											0.022	(0.027)
Richest											-0.0020	(0.0027)
Household Size												
R-squared	0.000		0.067		0.079		0.086		0.096		0.097	
BIC	10875.4		10488.5		10451.8		10420.7		10403.3		10441.0	
F	1.20		58.1		40.0		36.1		30.0		24.9	
df_m	1		8		14		17		23		28	
df_r	6532		6525		6519		6511		6505		6500	

Notes: *p<0.05, ** p<0.01, *** p<0.001. Standard errors in parentheses

Table 4L.14 Betas and Standard Errors from Ordinary Least Squares Regression Models Predicting Women's Autonomy: Domestic Violence Attitudes (0 - 7, higher values = greater belief in domestic violence) of Ever Married Women Ages 15 to 49 at Wave II, 2006 Egyptian Labor Market Panel Survey N=6,534

Key Variables	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6	
	b	(SE)	b	(SE)	b	(SE)	b	(SE)	b	(SE)	b	(SE)
Age (yrs)	-0.0062*	(0.0029)	-0.016***	(0.0029)	-0.013***	(0.0029)	-0.015***	(0.0030)	-0.0061*	(0.0031)	-0.0023	(0.0032)
Education (Ref=Primary)												
None			0.39***	(0.097)	0.35***	(0.097)	0.33***	(0.097)	0.14	(0.096)	0.049	(0.097)
Preparatory			-0.11	(0.14)	-0.13	(0.14)	-0.13	(0.14)	-0.13	(0.14)	-0.10	(0.13)
Secondary			-0.57*	(0.25)	-0.53*	(0.25)	-0.52*	(0.25)	-0.42	(0.25)	-0.27	(0.25)
Technical Secondary			-0.33***	(0.099)	-0.27**	(0.100)	-0.35***	(0.10)	-0.39***	(0.099)	-0.31**	(0.099)
Intermediate or Higher			-0.74***	(0.11)	-0.68***	(0.11)	-0.80***	(0.11)	-0.74***	(0.11)	-0.58***	(0.12)
Mother's Education (Ref=Primary)												
None			-0.66**	(0.22)	-0.62**	(0.22)	-0.63**	(0.22)	-0.48*	(0.22)	-0.36	(0.22)
Preparatory or Higher			-0.26***	(0.067)	-0.24***	(0.067)	-0.24***	(0.067)	-0.12	(0.067)	-0.057	(0.068)
Separated (Ref=Married)					-0.35**	(0.11)	-0.37***	(0.11)	-0.35***	(0.10)	-0.37***	(0.10)
Older than 18 at First Marriage					-0.23***	(0.064)	-0.23***	(0.064)	-0.11	(0.064)	-0.10	(0.064)
Dowry (Ref=None)												
No Response					-0.078	(0.061)	-0.080	(0.061)	0.059	(0.064)	0.037	(0.063)
Some					0.029	(0.058)	0.031	(0.058)	0.038	(0.058)	0.031	(0.058)
Marriage Process Duration (Months)					-0.000095	(0.0018)	-0.000030	(0.0018)	0.0033	(0.0018)	0.0036*	(0.0018)
Related to Husband (Ref=No)					0.11*	(0.054)	0.11*	(0.054)	-0.0017	(0.054)	0.0059	(0.054)
Ever Worked							0.067	(0.098)	0.10	(0.097)	0.084	(0.097)
Employment (Ref=Employed)												
Unemployed							0.34*	(0.15)	0.37*	(0.15)	0.33*	(0.15)
Retired							-0.17	(0.11)	-0.0043	(0.11)	-0.0035	(0.11)
Birth Setting: Urban									-0.055	(0.076)	-0.028	(0.076)
Region (Ref=Greater Cairo)												
Alexandria & Suez Canal									-0.75***	(0.10)	-0.76***	(0.10)
Urban Lower									0.14	(0.095)	0.095	(0.095)
Urban Upper									0.22*	(0.091)	0.13	(0.092)
Rural Lower									0.32**	(0.099)	0.21*	(0.100)
Rural Upper									0.72***	(0.10)	0.54***	(0.11)
Household Wealth Index (Ref=Poorest)												
Poorer											-0.25**	(0.080)
Middle											-0.32***	(0.084)
Richer											-0.45***	(0.091)
Richest											-0.67***	(0.099)
Household Size											0.018	(0.0099)
R-squared	0.001		0.057		0.062		0.066		0.099		0.106	
BIC	27797.3		27478.3		27499.0		27470.3		27289.5		27284.9	
F	4.66		49.5		30.7		27.1		31.0		27.4	
df_m	1		8		14		17		23		28	
df_r	6532		6525		6519		6511		6505		6500	

Notes: *p<0.05, ** p<0.01, *** p<0.001. Standard errors in parentheses

Table 4L.15 Odds Ratios and Standard Errors from Logistic Regression Models Predicting Women's Autonomy: Financial Autonomy of Ever Married Women Ages 15 to 49 at Wave II, 2006 Egyptian Labor Market Panel Survey N=6,534

Key Variables	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6	
	OR	(SE)	OR	(SE)	OR	(SE)	OR	(SE)	OR	(SE)	OR	(SE)
Age (yrs)	1.02***	(0.0034)	1.03***	(0.0038)	1.03***	(0.0039)	1.02***	(0.0040)	1.02***	(0.0041)	1.01*	(0.0043)
Education (Ref=Primary)												
None			0.69**	(0.090)	0.70**	(0.092)	0.69**	(0.090)	0.73*	(0.097)	0.91	(0.12)
Preparatory			1.31	(0.23)	1.35	(0.24)	1.36	(0.24)	1.44*	(0.25)	1.33	(0.24)
Secondary			2.09**	(0.59)	2.15**	(0.61)	2.18**	(0.62)	2.22**	(0.63)	1.60	(0.46)
Technical Secondary			1.56***	(0.20)	1.56***	(0.20)	1.52**	(0.20)	1.49**	(0.20)	1.23	(0.17)
Intermediate or Higher			2.73***	(0.37)	2.75***	(0.39)	2.52***	(0.36)	2.48***	(0.36)	1.70***	(0.25)
Mother's Education (Ref=Primary)												
None			2.03**	(0.46)	1.89**	(0.44)	1.94**	(0.45)	2.05**	(0.48)	1.53	(0.36)
Preparatory or Higher			1.11	(0.086)	1.10	(0.086)	1.10	(0.086)	1.09	(0.087)	0.92	(0.076)
Separated (Ref=Married)					1.84***	(0.22)	1.81***	(0.22)	1.82***	(0.22)	1.88***	(0.24)
Older than 18 at First Marriage					1.06	(0.094)	1.07	(0.095)	0.98	(0.088)	0.94	(0.086)
Dowry (Ref=None)												
No Response					1.04	(0.078)	1.05	(0.079)	0.90	(0.072)	0.94	(0.077)
Some					0.91	(0.067)	0.90	(0.067)	0.86	(0.066)	0.88	(0.069)
Marriage Process Duration (Months)					1.00	(0.0023)	1.00	(0.0024)	1.00	(0.0024)	1.00	(0.0024)
Related to Husband (Ref=No)					0.89	(0.062)	0.89	(0.063)	0.99	(0.071)	0.99	(0.072)
Ever Worked							1.14	(0.14)	1.24	(0.15)	1.29*	(0.16)
Employment (Ref=Employed)												
Unemployed							0.44***	(0.088)	0.43***	(0.086)	0.46***	(0.093)
Retired							0.78	(0.10)	0.79	(0.10)	0.78	(0.10)
Birth Setting: Urban									1.16	(0.11)	1.09	(0.11)
Region (Ref=Greater Cairo)												
Alexandria & Suez Canal									1.39**	(0.17)	1.41**	(0.18)
Urban Lower									1.66***	(0.19)	1.85***	(0.22)
Urban Upper									1.22	(0.14)	1.48***	(0.17)
Rural Lower									1.68***	(0.21)	2.21***	(0.28)
Rural Upper									0.82	(0.12)	1.30	(0.19)
Household Wealth Index (Ref=Poorest)												
Poorer											1.48**	(0.20)
Middle											2.11***	(0.28)
Richer											2.74***	(0.37)
Richest											4.31***	(0.62)
Household Size											0.91***	(0.014)
BIC	7026.5		6754.0		6772.8		6745.5		6729.5		6606.0	
df_r	1		8		14		17		23		28	

Notes: *p<0.05, ** p<0.01, *** p<0.001. Standard errors in parentheses

Table 4L.16 Ordinary Least Squares and Logistic Regression Models Predicting Women's Autonomy, Married Women Ages 15 to 49 at Wave II, 2006 Egyptian Labor Market Panel Survey N=5,740

Key Variables	Individual Decision-Making		Joint Decision-Making		Mobility		Gender Attitudes		Domestic Violence Attitudes		Financial Autonomy	
					OLS						Logistic	
	b	(SE)	b	(SE)	b	(SE)	b	(SE)	b	(SE)	OR	(SE)
Age (yrs)	0.042***	(0.0068)	0.0095	(0.0081)	0.0100***	(0.0021)	0.0035*	(0.0017)	0.0013	(0.0062)	0.99	(0.0084)
Education (Ref=Primary)												
None	0.049	(0.12)	-0.30*	(0.14)	-0.038	(0.036)	-0.010	(0.029)	-0.055	(0.11)	0.82	(0.13)
Preparatory	0.15	(0.16)	-0.0100	(0.19)	0.042	(0.049)	0.060	(0.040)	-0.052	(0.14)	1.18	(0.23)
Secondary	-0.21	(0.28)	0.26	(0.34)	-0.12	(0.088)	0.22**	(0.071)	-0.16	(0.26)	1.38	(0.42)
Technical Secondary	0.15	(0.12)	0.030	(0.14)	0.051	(0.037)	0.16***	(0.030)	-0.31**	(0.11)	1.11	(0.17)
Intermediate or Higher	0.096	(0.14)	0.13	(0.17)	0.028	(0.046)	0.23***	(0.037)	-0.50***	(0.13)	1.48*	(0.26)
Mother's Education (Ref=Primary)												
None	-0.19	(0.25)	0.31	(0.30)	-0.18*	(0.079)	0.082	(0.064)	-0.38	(0.23)	1.82*	(0.46)
Preparatory or Higher	-0.20**	(0.078)	0.31***	(0.094)	-0.12***	(0.025)	0.011	(0.020)	-0.064	(0.072)	0.93	(0.083)
Older than 18 at First Marriage	-0.16*	(0.076)	0.027	(0.092)	-0.076**	(0.024)	-0.0011	(0.019)	-0.079	(0.070)	1.02	(0.11)
Dowry (Ref=None)												
No Response	0.26***	(0.074)	-0.050	(0.089)	0.034	(0.023)	0.082***	(0.019)	0.023	(0.068)	1.00	(0.089)
Some	0.29***	(0.068)	-0.22**	(0.082)	0.065**	(0.021)	-0.070***	(0.017)	0.0075	(0.063)	0.90	(0.078)
Marriage Process Duration (Months)	0.0024	(0.0021)	0.0061*	(0.0026)	0.00070	(0.00067)	-0.000025	(0.00054)	0.0038	(0.0020)	1.00	(0.0027)
Related to Husband	-0.10	(0.063)	0.037	(0.076)	-0.057**	(0.020)	-0.045**	(0.016)	-0.016	(0.058)	0.94	(0.077)
Ever Worked	0.28*	(0.11)	0.22	(0.14)	0.12***	(0.035)	0.033	(0.029)	0.024	(0.10)	1.35*	(0.18)
Employment (Ref=Employed)												
Unemployed	0.076	(0.18)	0.35	(0.21)	-0.012	(0.056)	0.090*	(0.045)	0.28	(0.16)	0.36***	(0.083)
Retired	0.014	(0.12)	-0.11	(0.15)	-0.033	(0.039)	-0.070*	(0.031)	-0.065	(0.11)	0.71*	(0.10)
Birth Setting: Urban	0.083	(0.088)	0.039	(0.11)	0.014	(0.028)	-0.013	(0.022)	-0.038	(0.081)	1.03	(0.11)
Region (Ref=Greater Cairo)												
Alexandria & Suez Canal	-0.81***	(0.12)	0.32*	(0.14)	-0.24***	(0.037)	-0.095**	(0.030)	-0.77***	(0.11)	1.34*	(0.18)
Urban Lower	0.036	(0.11)	-0.92***	(0.14)	-0.071	(0.036)	-0.093**	(0.029)	0.013	(0.11)	1.60***	(0.21)
Urban Upper	-1.16***	(0.11)	-0.14	(0.13)	-0.38***	(0.035)	0.065*	(0.028)	0.053	(0.10)	1.19	(0.15)
Rural Lower	0.0062	(0.12)	-0.84***	(0.14)	-0.11**	(0.038)	-0.10***	(0.030)	0.13	(0.11)	1.84***	(0.26)
Rural Upper	-1.21***	(0.13)	-0.58***	(0.16)	-0.44***	(0.041)	-0.050	(0.033)	0.49***	(0.12)	0.96	(0.16)
Household Wealth Index (Ref=Poorest)												
Poorer	-0.15	(0.095)	-0.018	(0.11)	-0.079**	(0.030)	0.018	(0.024)	-0.28**	(0.087)	1.63**	(0.26)
Middle	-0.17	(0.099)	0.022	(0.12)	-0.11***	(0.031)	0.064*	(0.025)	-0.30**	(0.091)	2.52***	(0.40)
Richer	-0.42***	(0.11)	0.26*	(0.13)	-0.13***	(0.034)	0.035	(0.027)	-0.43***	(0.099)	3.14***	(0.51)
Richest	-0.39**	(0.12)	0.36*	(0.14)	-0.15***	(0.038)	0.017	(0.030)	-0.57***	(0.11)	4.86***	(0.83)
Household Size	-0.058***	(0.012)	0.037**	(0.014)	0.0017	(0.0037)	-0.0038	(0.0030)	0.0080	(0.011)	0.92***	(0.016)
Husband's Age (yrs)	0.0078	(0.0059)	-0.025***	(0.0071)	-0.0030	(0.0019)	-0.0029	(0.0015)	-0.0042	(0.0054)	1.02*	(0.0075)
Husband's Education (Ref=Primary)												
None	-0.061	(0.099)	-0.093	(0.12)	-0.043	(0.031)	0.011	(0.025)	0.26**	(0.091)	0.89	(0.12)
Preparatory	-0.072	(0.15)	0.13	(0.17)	-0.070	(0.046)	0.037	(0.037)	-0.18	(0.13)	0.92	(0.17)
Secondary	0.021	(0.31)	-0.13	(0.37)	-0.11	(0.098)	0.072	(0.079)	0.016	(0.29)	1.65	(0.54)
Technical Secondary	-0.052	(0.10)	0.047	(0.12)	-0.059	(0.032)	0.050	(0.026)	-0.077	(0.095)	0.97	(0.13)
Intermediate or Higher	-0.31*	(0.12)	0.32*	(0.15)	-0.11**	(0.038)	0.065*	(0.031)	-0.21	(0.11)	1.08	(0.16)
Husband's Employment												

(Ref=Employed)												
Unemployed	-0.15	(0.27)	0.12	(0.33)	0.017	(0.086)	0.041	(0.070)	0.070	(0.25)	0.78	(0.31)
Out of Labor Force	-0.020	(0.16)	-0.15	(0.19)	0.048	(0.051)	0.060	(0.041)	0.014	(0.15)	1.01	(0.21)
Husband's Migration (Ref=No)												
No Response	-0.032	(0.083)	0.13	(0.099)	-0.00097	(0.026)	0.013	(0.021)	-0.13	(0.076)	0.87	(0.084)
Yes	0.25*	(0.12)	0.23	(0.14)	0.054	(0.038)	-0.0013	(0.031)	0.091	(0.11)	1.05	(0.15)
R-squared	0.125		0.098		0.085		0.102		0.114		0.1141	
BIC	25039.9		27140.3		11773.4		9330.3		24087.6		5652.1	
F	22.1		16.7		14.4		17.6		19.9			
df_m	37		37		37		37		37		37	
df_r	5703		5703		5703		5703		5703			

Notes: *p<0.05, ** p<0.01, *** p<0.001. Standard errors in parentheses

Table 4L.17 Multilevel Ordinary Least Squares and Logistic Regression Models Predicting Women's Autonomy, Ever-Married Women Ages 15 to 49 at Wave II, 2006 Egyptian Labor Market Panel Survey N=6,534

Key Variables	Individual Decision-Making		Joint Decision-Making		Mobility		Gender Attitudes		Domestic Violence Attitudes		Financial Autonomy	
	b	(SE)	b	(SE)	OLS		b	(SE)	b	(SE)	Logistic	
					b	(SE)					OR	(SE)
Age (yrs)	0.057***	(0.0038)	-	-	0.0088**	-	-	-	-	-	1.02**	(0.004)
Education (Ref=Primary)												
None	0.059	(0.12)	-0.28*	(0.12)	-0.014	(0.034)	-0.021	(0.026)	0.072	(0.092)	0.80	(0.12)
Preparatory	0.14	(0.16)	0.060	(0.17)	0.028	(0.048)	0.058	(0.036)	-0.10	(0.13)	1.46*	(0.28)
Secondary	-0.47	(0.29)	0.39	(0.31)	-0.21*	(0.087)	0.18**	(0.066)	-0.18	(0.23)	1.48	(0.47)
Technical Secondary	-0.0080	(0.12)	0.15	(0.13)	0.014	(0.035)	0.15***	(0.027)	-0.26**	(0.094)	1.19	(0.17)
Intermediate or Higher	-0.23	(0.14)	0.42**	(0.15)	-0.021	(0.041)	0.24***	(0.031)	0.52***	(0.11)	1.76**	*
Mother's Education (Ref=Primary)												
None	0.055	(0.26)	0.16	(0.28)	-0.069	(0.079)	0.076	(0.059)	-0.32	(0.21)	1.59	(0.42)
Preparatory or Higher	-0.13	(0.081)	0.25**	(0.086)	-0.095***	(0.024)	0.0084	(0.018)	-0.14*	(0.064)	0.92	(0.083)
Separated (Ref=Married)	2.62***	(0.12)	-2.85***	(0.13)	0.32***	(0.037)	0.11***	(0.028)	0.40***	(0.099)	*	(0.28)
Older than 18 at First Marriage	-0.21**	(0.075)	0.092	(0.081)	-0.053*	(0.023)	0.0090	(0.017)	-0.087	(0.060)	0.95	(0.094)
Dowry (Ref=None)												
No Response	0.14	(0.093)	-0.091	(0.096)	0.0083	(0.028)	0.036	(0.021)	0.13	(0.077)	1.00	(0.11)
Some	0.11	(0.075)	-0.060	(0.080)	0.022	(0.023)	0.061***	(0.017)	0.15*	(0.061)	0.82*	(0.075)
Marriage Process Duration (Months)	0.0045*	(0.0022)	0.0054*	(0.002)	0.0011	(0.0006)	-0.00014	(0.0005)	0.00093	(0.001)	1.00	(0.002)
Related to Husband	-0.020	(0.065)	0.065	(0.070)	-0.023	(0.019)	0.051***	(0.015)	0.012	(0.052)	0.99	(0.078)
Ever Worked	0.092	(0.12)	0.18	(0.12)	0.047	(0.035)	0.048	(0.026)	0.079	(0.093)	1.29	(0.17)
Employment (Ref=Employed)												
Unemployed	0.13	(0.18)	0.26	(0.19)	-0.044	(0.054)	0.075	(0.041)	0.12	(0.14)	0.46**	*
Retired	-0.20	(0.13)	-0.096	(0.14)	-0.091*	(0.038)	-0.074**	(0.028)	0.092	(0.10)	0.69**	(0.099)
Birth Setting: Urban	0.068	(0.093)	0.065	(0.099)	0.024	(0.028)	0.0035	(0.021)	0.012	(0.075)	1.02	(0.11)
Region (Ref=Greater Cairo)												
Alexandria & Suez Canal	-0.57**	(0.18)	0.21	(0.18)	-0.13*	(0.059)	-0.12**	(0.040)	0.76***	(0.16)	1.42	(0.29)
Urban Lower	0.21	(0.18)	-0.96***	(0.17)	0.030	(0.057)	-0.11**	(0.039)	0.20	(0.16)	1.73**	(0.35)
Urban Upper	-0.89***	(0.18)	-0.25	(0.17)	-0.34***	(0.058)	0.022	(0.039)	0.20	(0.16)	1.52*	(0.31)
Rural Lower	0.19	(0.17)	-0.93***	(0.17)	-0.046	(0.054)	-0.14***	(0.037)	0.32*	(0.15)	1.88**	(0.37)
Rural Upper	-0.86***	(0.18)	-0.77***	(0.18)	-0.35***	(0.059)	-0.081*	(0.041)	0.55***	(0.16)	1.24	(0.27)
Household Wealth Index												
(Ref=Poorest)												
Poorer	-0.11	(0.096)	0.066	(0.10)	-0.068*	(0.029)	0.032	(0.022)	-0.21**	(0.077)	1.61**	*
Middle	-0.033	(0.10)	0.035	(0.11)	-0.070*	(0.030)	0.062**	(0.023)	0.27***	(0.081)	2.21**	*
Richer	-0.30**	(0.11)	0.28*	(0.12)	-0.12***	(0.033)	0.046	(0.025)	0.42***	(0.088)	3.05**	*
Richest	-0.21	(0.12)	0.41**	(0.13)	-0.16***	(0.036)	0.046	(0.027)	-	(0.098)	5.48**	(0.87)

Household Size	-0.10***	(0.012)	0.055***	(0.013)	-0.0039	(0.0036)	-0.0027	(0.0027)	0.023*	0.56***	(0.0096)	0.89**	(0.015)
Variance at Level 1 (Individual Level)	2.415		0.872		0.681		0.522		1.809				
Variance of Region at Level 2 (PSU Level)	0.929		2.560		0.304		0.190		0.905			0.762	
ICC	0.129		0.104		0.167		0.117		0.200			0.188	

Notes: *p<0.05, ** p<0.01, *** p<0.001. Standard errors in parentheses

Table 4L.18 Multilevel Ordinary Least Squares and Logistic Regression Models Predicting Women's Autonomy, Married Women Ages 15 to 49 at Wave II, 2006 Egyptian Labor Market Panel Survey N=5,740

Key Variables	Individual Decision-Making		Joint Decision-Making		Mobility		Gender Attitudes		Domestic Violence Attitudes		Financial Autonomy		
	OLS											Logistic	
	b	(SE)	b	(SE)	b	(SE)	b	(SE)	b	(SE)	OR	(SE)	
Age (yrs)	0.045***	(0.0065)	0.0061	(0.0080)	0.0095***	(0.0020)	0.0030	(0.0017)	-0.0028	(0.0059)	0.99	(0.0091)	
Education (Ref=Primary)													
None	-0.041	(0.11)	-0.25	(0.14)	-0.065	(0.034)	-0.030	(0.029)	0.0011	(0.10)	0.71*	(0.12)	
Preparatory	0.10	(0.15)	0.041	(0.18)	0.035	(0.047)	0.040	(0.039)	-0.054	(0.14)	1.27	(0.27)	
Secondary	-0.35	(0.27)	0.30	(0.33)	-0.19*	(0.084)	0.17*	(0.069)	-0.13	(0.25)	1.26	(0.43)	
Technical Secondary	0.10	(0.11)	0.057	(0.14)	0.025	(0.035)	0.13***	(0.029)	-0.27**	(0.10)	1.12	(0.18)	
Intermediate or Higher	0.033	(0.14)	0.21	(0.17)	0.016	(0.043)	0.20***	(0.036)	-0.48***	(0.13)	1.58*	(0.30)	
Mother's Education (Ref=Primary)													
None	-0.055	(0.24)	0.21	(0.30)	-0.13	(0.077)	0.098	(0.063)	-0.34	(0.22)	1.85*	(0.52)	
Preparatory or Higher	-0.12	(0.075)	0.26**	(0.092)	-0.10***	(0.023)	0.012	(0.019)	-0.14*	(0.069)	0.93	(0.091)	
Older than 18 at First Marriage	-0.16*	(0.073)	0.044	(0.090)	-0.058*	(0.023)	-0.0064	(0.019)	-0.052	(0.067)	1.02	(0.12)	
Dowry (Ref=None)													
No Response	0.11	(0.088)	-0.017	(0.10)	0.029	(0.028)	0.035	(0.022)	0.12	(0.081)	1.06	(0.13)	
Some	0.13	(0.071)	-0.052	(0.086)	0.050*	(0.022)	-0.062***	(0.018)	0.14*	(0.065)	0.83	(0.086)	
Marriage Process Duration (Months)	0.0016	(0.0021)	0.0060*	(0.0025)	0.00018	(0.00064)	-0.000038	(0.00053)	0.0015	(0.0019)	1.00	(0.0029)	
Related to Husband Ever Worked	-0.018	(0.061)	0.027	(0.075)	-0.036	(0.019)	-0.045**	(0.016)	-0.0098	(0.056)	0.94	(0.083)	
Employment (Ref=Employed)	0.086	(0.11)	0.27*	(0.13)	0.037	(0.034)	0.060*	(0.028)	0.036	(0.099)	1.36*	(0.20)	
Unemployed	-0.015	(0.17)	0.40	(0.21)	-0.061	(0.053)	0.094*	(0.044)	0.097	(0.15)	0.33***	(0.083)	
Retired	-0.080	(0.12)	-0.072	(0.15)	-0.083*	(0.037)	-0.064*	(0.031)	0.037	(0.11)	0.64**	(0.10)	
Birth Setting: Urban Region (Ref=Greater Cairo)	0.14	(0.087)	0.012	(0.11)	0.029	(0.027)	0.0041	(0.022)	0.0034	(0.080)	0.96	(0.11)	
Alexandria & Suez Canal	-0.61***	(0.18)	0.20	(0.19)	-0.18**	(0.058)	-0.098*	(0.042)	-0.77***	(0.17)	1.32	(0.29)	
Urban Lower	0.072	(0.18)	-0.91***	(0.19)	-0.037	(0.058)	-0.084*	(0.042)	0.12	(0.17)	1.59*	(0.35)	
Urban Upper	-1.02***	(0.18)	-0.14	(0.19)	-0.36***	(0.058)	0.058	(0.041)	0.089	(0.17)	1.24	(0.27)	
Rural Lower	0.13	(0.17)	-0.92***	(0.18)	-0.085	(0.054)	-0.10**	(0.040)	0.25	(0.16)	1.71*	(0.36)	
Rural Upper	-1.03***	(0.18)	-0.67***	(0.20)	-0.39***	(0.060)	-0.057	(0.044)	0.51**	(0.17)	0.99	(0.24)	
Household Wealth Index (Ref=Poorest)													
Poorer	-0.11	(0.091)	0.051	(0.11)	-0.062*	(0.029)	0.033	(0.024)	-0.26**	(0.084)	1.74**	(0.30)	
Middle	-0.11	(0.097)	0.063	(0.12)	-0.081**	(0.030)	0.074**	(0.025)	-0.28**	(0.089)	2.66***	(0.45)	
Richer	-0.33**	(0.11)	0.27*	(0.13)	-0.11***	(0.033)	0.047	(0.027)	-0.44***	(0.096)	3.58***	(0.64)	
Richest	-0.34**	(0.12)	0.40**	(0.14)	-0.14***	(0.037)	0.039	(0.030)	-0.51***	(0.11)	6.13***	(1.16)	
Household Size	-0.053***	(0.012)	0.036*	(0.014)	0.0073*	(0.0036)	-0.0049	(0.0030)	0.017	(0.011)	0.91***	(0.018)	
Husband's Age (yrs)	0.0069	(0.0056)	-0.023**	(0.0069)	-0.0022	(0.0018)	-0.0030*	(0.0015)	-0.0024	(0.0052)	1.02*	(0.0081)	
Husband's Education (Ref=Primary)													
None	-0.020	(0.094)	-0.073	(0.12)	-0.030	(0.029)	0.0052	(0.024)	0.19*	(0.086)	0.86	(0.13)	
Preparatory	-0.047	(0.14)	0.13	(0.17)	-0.068	(0.043)	0.029	(0.036)	-0.13	(0.13)	0.84	(0.17)	
Secondary	-0.11	(0.30)	0.0096	(0.36)	-0.12	(0.092)	0.054	(0.077)	0.15	(0.27)	1.51	(0.55)	
Technical Secondary	-0.092	(0.098)	0.12	(0.12)	-0.065*	(0.031)	0.037	(0.025)	-0.050	(0.090)	0.89	(0.13)	
Intermediate or Higher	-0.32**	(0.12)	0.32*	(0.14)	-0.11**	(0.036)	0.053	(0.030)	-0.13	(0.11)	1.00	(0.16)	

Husband's Employment

(Ref=Employed)

Unemployed	-0.17	(0.26)	0.12	(0.32)	0.028	(0.081)	0.034	(0.067)	-0.0050	(0.24)	0.73	(0.30)
Out of Labor Force	-0.052	(0.15)	-0.11	(0.19)	0.028	(0.048)	0.070	(0.040)	0.0083	(0.14)	0.99	(0.22)

Husband's Migration (Ref=No)

No Response	0.0080	(0.084)	0.15	(0.10)	0.022	(0.026)	0.029	(0.021)	-0.074	(0.077)	1.01	(0.11)
Yes	0.23*	(0.12)	0.24	(0.14)	0.055	(0.037)	0.00028	(0.031)	-0.010	(0.11)	1.03	(0.16)

Variance at Level 1 (Individual

Level)	1.94		2.41		0.681		0.522		1.809			
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Variance of Region at Level 2 (PSU

Level)	0.756		0.681		0.304		0.190		0.905		0.762	
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ICC	0.132		0.073		0.167		0.117		0.200		0.188	
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Notes: *p<0.05, ** p<0.01, *** p<0.001. Standard errors in parentheses

Table 4D.1 Sample Descriptive Characteristics (Means (SE) or %) of Ever Married Women Ages 15 to 49 in 2008 Egyptian Demographic and Health Survey N=14,756

Key Variables	N	% or Mean (SD)
INDIVIDUAL VARIABLES		
Current Age in years		
15 - 19 yrs	431	2.92
20 - 24 yrs	2,038	13.81
25 - 29 yrs	2,869	19.44
30 - 34 yrs	2,448	16.59
35 - 39 yrs	2,413	16.35
40 - 44 yrs	2,356	15.97
45 - 49 yrs	2,201	14.92
Mean (SD)	14,756	33.8 (8.67)
Marital Status		
Married	13,648	92.49
Separated/Divorced/Widow	1,108	7.51
Age at First Marriage		
Less than 18 years	4,954	33.57
18 years or older	9,802	66.43
Mean (SD)	14,756	19.6 (4.17)
Education		
None	5,073	34.38
Primary	1,309	8.87
Preparatory	554	3.75
Secondary	1,561	10.58
Technical Secondary	4,706	31.89
Intermediate or Higher	1,553	10.52
Years of Education	14,756	6.73 (5.82)
Ever Worked		
No	12,261	83.09
Yes	2,495	16.91
Religion		
Muslim	14,001	94.88
Christian	755	5.12
Son		
No	3,260	22.09
Yes	11,496	77.91
HOUSEHOLD VARIABLES		
Setting of Birth		
Rural	8,727	59.14
Urban	6,029	40.86
Region		
Urban Governorates	2,171	14.71
Urban Lower	1,593	10.8
Urban Upper	1,743	11.81
Rural Lower	4,251	28.81
Rural Upper	4,998	33.87
Household Wealth Index		
Poorest	3,084	20.9
Poorer	2,986	20.24
Middle	2,987	20.24
Richer	2,862	19.4
Richest	2,837	19.23
Household Size	14,756	6.02 (3.89)
SPOUSE VARIABLES		
Current Age in years		
	14,756	41.2 (11.1)
Education		
None	3,455	23.41
Primary	1,713	11.61
Preparatory	818	5.54
Secondary	1,548	10.49
Technical Secondary	5,079	34.42
Intermediate or Higher	2,143	14.52

Table 4D.2 Summary Statistics: Primary Study Scales of Autonomy for Women 15 to 49 years old, 2008 Egyptian Demographic Health Survey

Key Scales	Ever-Married Women - EDHS N=14,756		
	N	Range	% or Mean (SD)
AUTONOMY			
Household Decision-Making			
Individual Participation in Decisions	14,756	0 - 5	0.80 (1.02)
Joint Participation in Decisions	14,756	0 - 5	2.57 (1.81)
Domestic Violence Attitudes	14,756	0 - 5	1.21 (1.66)

Table 4D.3 Distribution of Household Decisions for Ever Married Women ages 15 to 49 in 2008 Egyptian Demographic and Health Survey

Count	Ever-Married Women - EDHS N=14,756					
	Individual			Joint		
	Frequency	Percent	Frequency	Percent	Frequency	Percent
0	7,274	49.3	2,980	20.2		
1	4,681	31.72	1,857	12.58		
2	1,847	12.52	2,127	14.41		
3	557	3.77	2,435	16.5		
4	238	1.61	2,209	14.97		
5	159	1.08	3,148	21.33		

Table 4D.4 Summary Statistics: Primary Study Scales of Autonomy for Women 15 to 49 years old, 2006 Egyptian Labor Market Panel Survey and 2008 Egyptian Demographic Health Survey

Key Scales	Ever-Married Women - ELMPS N=6,534			Ever-Married Women - EDHS N=14,756		
	N	Range	% or Mean (SD)	N	Range	% or Mean (SD)
AUTONOMY						
Household Decision-Making						
Individual Participation in Decisions	5,740	0 - 4	0.99 (0.98)	14,756	0 - 4	0.83 (0.97)
Joint Participation in Decisions	5,740	0 - 4	1.68 (1.27)	14,756	0 - 4	1.94 (1.51)
Domestic Violence Attitudes	5,740	0 - 4	0.89 (1.25)	14,756	0 - 4	0.86 (1.28)

Table 4D.5 Distribution of Household Decisions for Ever Married Women ages 15 to 49 in 2006 Egyptian Labor Market Panel Survey and 2008 Egyptian Demographic and Health Survey

Count	Ever-Married Women - ELMPS N=6,534				Ever-Married Women - EDHS N=14,756			
	Individual		Joint		Individual		Joint	
	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent
0	2,278	34.86	1,918	29.35	7,311	49.55	3,916	26.54
1	2,219	33.96	1,454	22.25	4,704	31.88	2,140	14.5
2	1,122	17.17	1,537	23.52	1,847	12.52	3,005	20.36
3	512	7.84	1,076	16.47	590	4	2,265	15.35
4	403	6.17	549	8.4	304	2.06	3,430	23.24

Table 4D.6 OLS Models Predicting Women's Autonomy: Ever-Married Women Ages 15 to 49, 2008 Egyptian Demographic and Health Survey (N=14,756)

Key Variables	EDHS 2008 Individual Decision-Making		EDHS 2008 Joint Decision- Making		EDHS 2008 Domestic Violence Attitudes	
	b	(SE)	b	(SE)	b	(SE)
Age (yrs)	0.0049**	(0.0017)	0.012***	(0.0033)	-0.00065	(0.0024)
Education (Ref=Primary)						
None	-0.041	(0.054)	-0.13	(0.088)	0.35***	(0.072)
Preparatory	-0.055	(0.057)	0.10	(0.100)	0.19*	(0.078)
Secondary	0.053	(0.057)	0.079	(0.092)	-0.14	(0.075)
Technical Secondary	0.029	(0.054)	0.30**	(0.091)	-0.30***	(0.069)
Intermediate or Higher	0.046	(0.066)	0.32**	(0.11)	-0.37***	(0.076)
Older than 18 at First Marriage	0.014	(0.023)	0.0042	(0.041)	-0.085*	(0.035)
Ever Worked	0.060*	(0.029)	-0.013	(0.048)	0.0043	(0.037)
Christian	0.090	(0.051)	0.034	(0.077)	-0.20*	(0.077)
Sons	0.083***	(0.024)	0.25***	(0.038)	-0.075**	(0.029)
Birth Setting: Urban	-0.39***	(0.058)	0.28	(0.18)	-0.062	(0.11)
Region (Ref=Greater Cairo and Alexandria)						
Urban Lower	-0.14**	(0.048)	0.33***	(0.092)	0.15**	(0.050)
Urban Upper	0.072	(0.054)	-0.34***	(0.083)	0.23***	(0.059)
Rural Lower	-0.45***	(0.070)	0.51**	(0.19)	0.011	(0.12)
Rural Upper	-0.30***	(0.060)	-0.22	(0.18)	0.54***	(0.10)
Household Wealth Index (Ref=Poorest)						
Poorer	0.021	(0.031)	-0.00058	(0.056)	-0.29***	(0.060)
Middle	-0.075*	(0.035)	0.22***	(0.064)	-0.37***	(0.063)
Richer	-0.11*	(0.042)	0.30***	(0.075)	-0.56***	(0.067)
Richest	-0.079	(0.047)	0.36***	(0.087)	-0.68***	(0.068)
Household Size	-0.0084**	(0.0032)	-0.025**	(0.0074)	0.024***	(0.0059)
Husband's Age (yrs)	-0.0016	(0.0013)	-0.021***	(0.0024)	-0.00024	(0.0019)
Husband's Education (Ref=Primary)						
None	0.12**	(0.045)	-0.35***	(0.077)	0.13*	(0.067)
Preparatory	0.19***	(0.046)	-0.083	(0.082)	0.067	(0.068)
Secondary	0.071	(0.048)	-0.088	(0.081)	0.00063	(0.067)
Technical Secondary	0.034	(0.042)	-0.019	(0.074)	-0.10	(0.058)
Intermediate or Higher	-0.093	(0.050)	0.16	(0.088)	-0.18**	(0.067)
R-squared	0.077		0.272		0.222	
BIC	41627.4		55016.8		53368.7	
F	45.6		204.0		155.8	
df_m	27		27		27	
df_r	14728		14728		14728	

Notes: *p<0.05, ** p<0.01, *** p<0.001. Standard errors in parentheses

Table 4D.7 Multilevel OLS Models Predicting Women's Autonomy: Ever-Married Women Ages 15 to 49, 2008 Egyptian Demographic and Health Survey (N=14,756)

Key Variables	EDHS 2008 Individual Decision-Making		EDHS 2008 Joint Decision- Making Poisson		EDHS 2008 Domestic Violence Attitudes	
	b	(SE)	b	(SE)	b	(SE)
Age (yrs)	0.0049**	(0.0015)	0.0096***	(0.0023)	0.00041	(0.0023)
Education (Ref=Primary)						
None	-0.020	(0.044)	-0.17*	(0.068)	0.26***	(0.066)
Preparatory	0.0091	(0.049)	0.026	(0.075)	0.13	(0.073)
Secondary	0.065	(0.048)	0.0089	(0.073)	-0.21**	(0.071)
Technical Secondary	0.028	(0.045)	0.20**	(0.069)	-0.39***	(0.067)
Intermediate or Higher	0.034	(0.055)	0.26**	(0.084)	-0.46***	(0.082)
Older than 18 at First Marriage	0.0057	(0.019)	-0.029	(0.029)	-0.066*	(0.028)
Ever Worked	0.087***	(0.023)	0.13***	(0.036)	-0.017	(0.034)
Christian	0.0011	(0.040)	0.054	(0.062)	-0.26***	(0.059)
Sons	0.054**	(0.020)	0.098**	(0.031)	-0.088**	(0.030)
Birth Setting: Urban	-0.40***	(0.070)	0.22	(0.13)	-0.10	(0.11)
Region (Ref=Greater Cairo and Alexandria)						
Urban Lower	-0.14**	(0.047)	0.37***	(0.082)	0.037	(0.070)
Urban Upper	0.066	(0.047)	-0.22**	(0.082)	0.24***	(0.070)
Rural Lower	-0.43***	(0.079)	0.42**	(0.14)	-0.16	(0.12)
Rural Upper	-0.25***	(0.072)	-0.35**	(0.13)	0.43***	(0.11)
Household Wealth Index (Ref=Poorest)						
Poorer	0.030	(0.026)	0.033	(0.040)	-0.30***	(0.039)
Middle	-0.029	(0.029)	0.13**	(0.045)	-0.43***	(0.043)
Richer	-0.042	(0.034)	0.18***	(0.053)	-0.64***	(0.050)
Richest	-0.057	(0.039)	0.17**	(0.061)	-0.80***	(0.058)
Household Size	-0.015***	(0.0027)	-0.031***	(0.0042)	0.020***	(0.0040)
Husband's Age (yrs)	0.0036**	(0.0011)	-0.0028	(0.0017)	0.0013	(0.0017)
Husband's Education (Ref=Primary)						
None	0.12**	(0.038)	-0.15*	(0.059)	0.14*	(0.057)
Preparatory	0.13**	(0.041)	-0.090	(0.063)	0.077	(0.061)
Secondary	0.049	(0.042)	0.00070	(0.064)	0.020	(0.062)
Technical Secondary	0.0095	(0.038)	0.020	(0.058)	-0.098	(0.056)
Intermediate or Higher	-0.083	(0.045)	0.15*	(0.069)	-0.18**	(0.067)
Variance at Level 1 (Individual Level)	0.93		1.41		1.38	
Variance of Region at Level 2 (PSU Level)	0.32		0.62		0.48	
ICC	0.11		0.16		0.11	

Notes: *p<0.05, ** p<0.01, *** p<0.001. Standard errors in parentheses

Table 4L.19 Ordinary Least Squares Models Predicting Women's Autonomy, Married Women Ages 15 to 49, 2006 Egyptian Labor Market Panel Survey (N=5,740) and in 2008 Egyptian Demographic and Health Survey (N=14,756)

Key Variables	ELMPS 2006 Individual Decision- Making		EDHS 2008 Individual Decision- Making		ELMPS 2006 Joint Decision-Making		EDHS 2008 Joint Decision- Making		ELMPS 2006 Domestic Violence Attitudes		EDHS 2008 Domestic Violence Attitudes	
	OLS		OLS		OLS		OLS		OLS		OLS	
	b	(SE)	b	(SE)	b	(SE)	b	(SE)	b	(SE)	b	(SE)
Age (yrs)	0.014***	(0.0030)	0.0061***	(0.0016)	0.0051	(0.0039)	0.011***	(0.0026)	0.0056	(0.0038)	-0.00037	(0.0019)
Education (Ref=Primary)												
None	0.076	(0.051)	-0.045	(0.052)	-0.11	(0.066)	-0.080	(0.075)	-0.055	(0.066)	0.27***	(0.055)
Preparatory	0.053	(0.069)	-0.069	(0.054)	-0.046	(0.090)	0.11	(0.084)	-0.014	(0.089)	0.15*	(0.059)
Secondary	-0.19	(0.12)	0.034	(0.055)	0.32*	(0.16)	0.069	(0.077)	-0.076	(0.16)	-0.099	(0.056)
Technical Secondary	0.019	(0.052)	0.019	(0.051)	0.039	(0.068)	0.21**	(0.077)	-0.13	(0.067)	-0.19***	(0.051)
Intermediate or Higher	-0.055	(0.062)	0.012	(0.063)	0.17*	(0.081)	0.22*	(0.095)	-0.22**	(0.081)	-0.23***	(0.056)
Older than 18 at First Marriage	-0.045	(0.033)	0.0066	(0.022)	-0.016	(0.044)	-0.0076	(0.034)	-0.059	(0.043)	-0.054*	(0.027)
Ever Worked	0.12***	(0.028)	0.055*	(0.028)	0.18***	(0.037)	-0.016	(0.041)	0.062	(0.037)	0.0057	(0.028)
Birth Setting: Urban	0.035	(0.038)	-0.36***	(0.056)	0.054	(0.050)	0.27	(0.14)	-0.028	(0.050)	-0.087	(0.085)
Region (Ref=Greater Cairo)												
Alexandria & Suez Canal	-0.43***	(0.049)	-	-	0.054	(0.065)	-	-	-0.35***	(0.064)	-	-
Urban Lower	-0.061	(0.047)	-0.13**	(0.047)	-0.49***	(0.062)	0.19*	(0.081)	0.11	(0.061)	0.13***	(0.037)
Urban Upper	-0.66***	(0.046)	0.077	(0.052)	-0.30***	(0.060)	-0.35***	(0.069)	0.066	(0.060)	0.19***	(0.044)
Rural Lower	-0.050	(0.050)	-0.41***	(0.068)	-0.39***	(0.065)	0.38*	(0.15)	0.18**	(0.065)	-0.030	(0.092)
Rural Upper	-0.59***	(0.054)	-0.29***	(0.058)	-0.48***	(0.071)	-0.19	(0.14)	0.31***	(0.071)	0.39***	(0.079)
Household Wealth Index (Ref=Poorest)												
Poorer	-0.010	(0.041)	0.013	(0.030)	-0.016	(0.054)	0.0081	(0.047)	-0.21***	(0.054)	-0.23***	(0.048)
Middle	-0.041	(0.043)	-0.079*	(0.034)	0.010	(0.057)	0.20***	(0.055)	-0.22***	(0.056)	-0.30***	(0.049)
Richer	-0.15**	(0.047)	-0.11**	(0.040)	0.12	(0.062)	0.28***	(0.065)	-0.30***	(0.061)	-0.44***	(0.052)
Richest	-0.17***	(0.052)	-0.076	(0.045)	0.22**	(0.068)	0.33***	(0.075)	-0.41***	(0.067)	-0.53***	(0.052)
Household Size	-0.039***	(0.0052)	-0.0055	(0.0030)	-0.022**	(0.0067)	-0.014*	(0.0060)	0.0042	(0.0067)	0.015**	(0.0047)
Husband's Age (yrs)	0.0035	(0.0025)	-0.0019	(0.0013)	-0.011***	(0.0033)	-0.016***	(0.0019)	-0.0050	(0.0033)	-0.000077	(0.0014)
Husband's Education (Ref=Primary)												
None	-0.015	(0.043)	0.11**	(0.043)	0.0039	(0.057)	-0.28***	(0.065)	0.15**	(0.056)	0.11*	(0.052)
Preparatory	0.00097	(0.064)	0.19***	(0.043)	0.070	(0.083)	-0.059	(0.069)	-0.14	(0.083)	0.052	(0.051)
Secondary	-0.033	(0.14)	0.075	(0.045)	0.12	(0.18)	-0.061	(0.069)	-0.065	(0.18)	0.0038	(0.052)
Technical Secondary	-0.0030	(0.045)	0.044	(0.040)	0.071	(0.059)	-0.016	(0.063)	-0.065	(0.058)	-0.068	(0.045)
Intermediate or Higher	-0.10	(0.053)	-0.071	(0.048)	0.21**	(0.069)	0.14	(0.074)	-0.14*	(0.069)	-0.11*	(0.051)
R-squared	0.120		0.079		0.104		0.233		0.092		0.203	
BIC	15496.4		39580.8		18580.7		50414.3		18502.3		46121.5	

Notes: *p<0.05, ** p<0.01, *** p<0.001. Standard errors in parentheses

Table 4L.20 Multilevel OLS Models Predicting Women's Autonomy, Married Women Ages 15 to 49, 2006 Egyptian Labor Market Panel Survey (N=5,740) and in 2008 Egyptian Demographic and Health Survey (N=14,756)

Key Variables	ELMPS 2006 Individual Decision-Making		EDHS 2008 Individual Decision-Making		ELMPS 2006 Joint Decision-Making		EDHS 2008 Joint Decision-Making		ELMPS 2006 Domestic Violence Attitudes		EDHS 2008 Domestic Violence Attitudes	
	OLS				OLS				OLS			
	b	(SE)	b	(SE)	b	(SE)	b	(SE)	b	(SE)	b	(SE)
Age (yrs)	0.015***	(0.0029)	0.0056***	(0.0014)	0.0040	(0.0038)	0.0080***	(0.0019)	0.0021	(0.0037)	0.00023	(0.0017)
Education (Ref=Primary)												
None	0.044	(0.049)	-0.027	(0.041)	-0.10	(0.065)	-0.13*	(0.058)	-0.0018	(0.063)	0.21***	(0.051)
Preparatory	0.053	(0.066)	-0.0065	(0.046)	-0.045	(0.088)	0.031	(0.064)	-0.011	(0.085)	0.10	(0.057)
Secondary	-0.21	(0.12)	0.047	(0.044)	0.29	(0.16)	0.0092	(0.063)	-0.054	(0.15)	-0.15**	(0.056)
Technical Secondary	0.015	(0.050)	0.016	(0.042)	0.033	(0.067)	0.14*	(0.060)	-0.14*	(0.064)	-0.26***	(0.053)
Intermediate or Higher	-0.050	(0.060)	0.0073	(0.051)	0.16*	(0.080)	0.20**	(0.073)	-0.25**	(0.077)	-0.31***	(0.064)
Older than 18 at First Marriage	-0.043	(0.032)	0.00078	(0.018)	-0.0084	(0.043)	-0.026	(0.025)	-0.046	(0.041)	-0.044*	(0.022)
Ever Worked	0.067*	(0.028)	0.078***	(0.022)	0.18***	(0.038)	0.10***	(0.031)	0.031	(0.036)	-0.0087	(0.027)
Birth Setting: Urban	0.044	(0.038)	-0.36***	(0.067)	0.057	(0.050)	0.22*	(0.11)	-0.0020	(0.049)	-0.11	(0.082)
Region (Ref=Greater Cairo)												
Alexandria & Suez Canal	-0.41***	(0.072)	-	-	0.023	(0.084)	-	-	-0.32***	(0.098)	-	-
Urban Lower	-0.063	(0.071)	-0.12**	(0.045)	-0.49***	(0.082)	0.24***	(0.070)	0.16	(0.096)	0.035	(0.055)
Urban Upper	-0.64***	(0.071)	0.068	(0.044)	-0.28***	(0.082)	-0.26***	(0.069)	0.082	(0.097)	0.17**	(0.054)
Rural Lower	-0.042	(0.068)	-0.39***	(0.075)	-0.42***	(0.080)	0.31*	(0.12)	0.24**	(0.091)	-0.16	(0.092)
Rural Upper	-0.55***	(0.074)	-0.24***	(0.069)	-0.49***	(0.088)	-0.30**	(0.11)	0.32**	(0.10)	0.29***	(0.084)
Household Wealth Index (Ref=Poorest)												
Poorer	-0.0065	(0.041)	0.021	(0.024)	0.026	(0.054)	0.042	(0.035)	-0.19***	(0.052)	-0.24***	(0.031)
Middle	-0.028	(0.043)	-0.038	(0.027)	0.039	(0.057)	0.13***	(0.039)	-0.19***	(0.055)	-0.35***	(0.034)
Richer	-0.12**	(0.047)	-0.051	(0.032)	0.14*	(0.062)	0.18***	(0.045)	-0.29***	(0.060)	-0.50***	(0.039)
Richest	-0.15**	(0.052)	-0.059	(0.036)	0.24***	(0.068)	0.18***	(0.052)	-0.36***	(0.066)	-0.63***	(0.045)
Household Size	-0.037***	(0.0051)	-0.012***	(0.0025)	-0.023***	(0.0068)	-0.022***	(0.0035)	0.010	(0.0066)	0.014***	(0.0031)
Husband's Age (yrs)	0.0031	(0.0025)	0.0034**	(0.0011)	-0.010**	(0.0033)	-0.0024	(0.0015)	-0.0031	(0.0032)	0.00083	(0.0013)
Husband's Education (Ref=Primary)												
None	-0.0026	(0.042)	0.11**	(0.036)	0.019	(0.056)	-0.12*	(0.051)	0.11*	(0.054)	0.12**	(0.045)
Preparatory	0.0018	(0.062)	0.12**	(0.038)	0.071	(0.082)	-0.054	(0.054)	-0.11	(0.079)	0.060	(0.048)
Secondary	-0.081	(0.13)	0.056	(0.039)	0.19	(0.18)	0.0055	(0.055)	-0.0015	(0.17)	0.019	(0.048)
Technical Secondary	-0.020	(0.044)	0.021	(0.035)	0.090	(0.058)	0.012	(0.050)	-0.046	(0.056)	-0.062	(0.044)
Intermediate or Higher	-0.11*	(0.051)	-0.060	(0.042)	0.21**	(0.068)	0.11	(0.059)	-0.090	(0.066)	-0.10	(0.052)
Variance at Level 1 (Individual Level)	0.994		0.863		1.16		1.22		1.106		1.08	
Variance of Region at Level 2 (PSU Level)	0.276		0.311		0.258		0.523		0.418		0.375	
ICC	0.073		0.115		0.047		0.156		0.125		0.107	

Notes: *p<0.05, ** p<0.01, *** p<0.001. Standard errors in parentheses

Chapter Five: Aim 2 Results - Determinants of Women's Autonomy Over Time

5.1 Introduction

In Chapter 4, I presented results examining the determinants of women's autonomy in 2006. In this chapter, I use 2012 data to examine those same determinants in 2012 and over time with the panel sample of women from 2006. In this chapter, I present the results of the second study aim, which *examines the changes determinants of changes in women's autonomy over the life course*. This aim has three main objectives, the first is to assess the extent to which women's autonomy has changed over time. The second objective is to see what individual, household, and community factors affect changes in women's autonomy. The third objective is to see how fertility affects women's autonomy over the life course. The overall goal is to see if women's autonomy improves over time, to determine whether household level factors better predict women's autonomy over time, and to see whether at later stages in the life course, women's autonomy is determined by time-varying variables like fertility. The main hypothesis is that women's autonomy will improve over time, communities and household factors will explain variation in autonomy, specifically, individual and joint decision-making, mobility, and financial autonomy. Additionally, I hypothesize that at early stages of the life course, education and employment exert significant influence on women's autonomy, but at later stages, women's autonomy is determined by changing circumstances like having a child.

This chapter is divided into several sections. I begin, in section 5.2, by describing the analytic approach. Next, in section 5.3, I present the sample characteristics for four samples: ever-married women in the 2012 ELMPS, married women in the 2012 ELMPS, the panel sample of married women in 2006, and ever married women in 2012 who were also in the 2006 ELMPS. Then, in section 5.4, I examine the main effects on women's autonomy of individual and

household level factors in women's lives. In the fifth section, I present the multivariate linear regression models and multi level models of women's autonomy by individual and household level factors for the 2012 cross section. Then, to examine changes over time and to consider fertility as a predictor of autonomy, in sections 5.6 – 5.8, I use the panel sample of women from the 2006 and 2012 ELMPS to fit multi level models of autonomy over time. The outcomes of interest in this second research aim for women's autonomy are individual and joint household decision-making, mobility, and financial autonomy. The chapter closes with a summary of findings and discussion of the determinants of women's autonomy over time.

5.2 Analytic Approach

I present the results of multilevel models for a total of four outcomes: three continuous outcomes of autonomy and one dichotomous outcome. Continuous variables (individual household decision-making, joint household decision-making, and mobility) are modeled using multilevel OLS regression. Dichotomous variables (financial autonomy) are modeled using multilevel logistic regression.

First, for the 2012 cross sectional analyses, I use two samples of women: ever-married women (N=8,719) and married women (N=7,620) from the 2012 ELMPS. For the analysis of women's autonomy over time, I also use two samples of women: a sample of women who were married in 2006 and participated in both Waves II and III (2006 and 2012) of the ELMPS (N=4,575), and women who were ever married by 2012 and participated in both Waves II and III (2006 and 2012) of the ELMPS (N=6,594).

For the 2012 cross sectional analyses, similar to the 2006 analyses, in order to replicate the extant literature on women's autonomy and to provide a benchmark model for the observed effect of individual characteristics on autonomy, my first set of models are at the individual level. First, I add age, then, all education variables, followed by all marriage variables, and

employment. Then, I add the variables on location at birth and region, and finally, household wealth and size. Given the influence of husband's in households in Egypt, I also show results of models with characteristics of the husband including husband's age, education, employment, and religion. My final set of models for both 2012 samples are multilevel with the first level being the individual and the second level being the community (PSU).

For the analysis of women's autonomy over time, I use the panel samples to show final multivariate models of individual decision-making, joint decision-making, mobility, and financial autonomy. Then, I show a final set of multilevel models of autonomy over time for individuals nested in communities.

5.3 ELMPS 2012 Sample Characteristics

Descriptive statistics for my primary ELMPS-2012 analytic sample are presented in Table 5L.1. The final 2012 sample consists of 8,719 women who were ever married and between the ages of 15 and 49 in 2012. There are 7,620 women married in 2012, between the ages of 15 and 49, and with spouses available in the data. These women comprise a second analytic sample for the ELMPS-2012, and their descriptive characteristics are shown in Table 5L.2.

For the 8,719 ever-married women, the average age of respondents is 31 years and 95% are still married. The average age at first marriage is around 21 years old. About 24% of women are related to their husbands, most commonly as first cousins. The average duration between being engaged and formal marriage is 10 months. While 49.4% of the sample respondents did not receive a dowry, 21.6% received some amount of dowry. Similar to the 2006 sample of women, majority of respondents' mothers (79.2%) have a primary education only. Thirty percent of the women have no education and about half the sample of women have at least a traditional or technical secondary education. Twenty-seven percent of the women report ever being employed, and only 18% are currently employed.

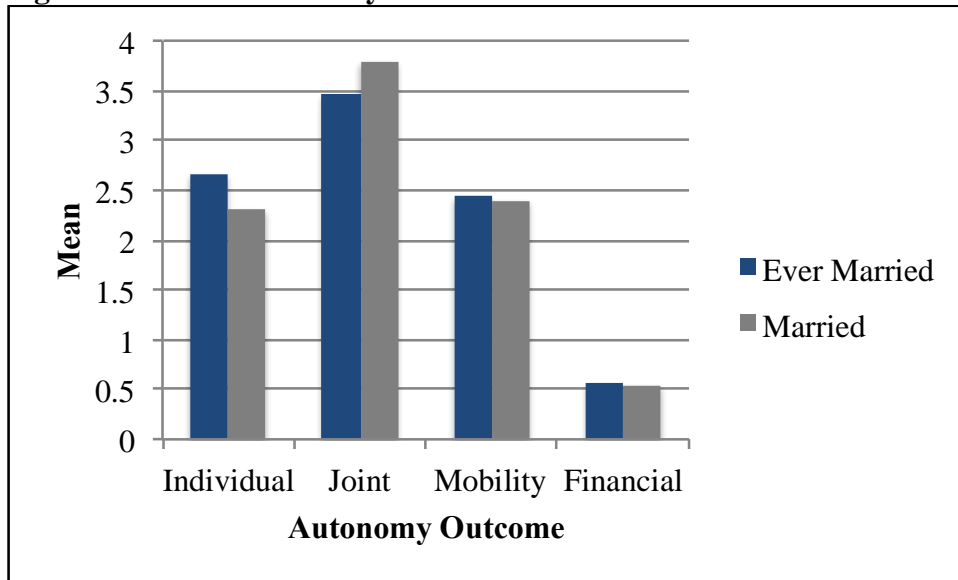
For household level variables, 58% of the women live in rural areas currently, and 60% lived in rural areas at birth. In 2006, the average household size is 5.22 members, but in 2012, the average household size is 3.62 members. A third of the sample of women live in rural lower Egypt and a third live in rural upper Egypt. Only 9% are in the greater Cairo area. This is in contrast to the 2006 sample where close to 14% lived in the greater Cairo area, but consistent with those who were lost to follow up being mostly from the greater Cairo area. Households are fairly evenly distributed across assets/wealth categories with a fifth falling into each category. Heads of household are typically male as there are only 8% of household with female heads.

For the 7,620 women who are married in 2012, descriptive characteristics are similar to ever-married women (see Table 5L.2). Table 5L.3 shows the descriptive statistics for the sample of men (N=7,620) married to the analytic sample of married women. On average, the husbands are 37 years old with a 6.5-year age difference with wives. Approximately 58% of the men have higher than a secondary education. The average difference in years of education between the husbands and their wives is 3 years. One hundred percent of the men report ever working, and 99.9% report currently being employed in 2012. About 73% of the men have permanent employment. Despite being employed, only 36% of men report having medical insurance. Seventy-nine percent of the men are Muslim, 5% are Christian, and 16% did not respond. This is close to the last census in Egypt in 2006, which reports between 5 – 10% Christians located primarily in Upper Egypt. The religion of the women is not reported, and the ELMPS-2012 was the first time the question was asked of the men.

Table 5L.4 shows the summary statistics for all the study scales and outcome variables. Correlation matrices and counts for study scales are found in the Appendix (Tables 5A.1 – 5A.3). Figure 5.1 shows the mean autonomy for all measures in 2012. Higher values of decision-

making, joint decision-making, and mobility indicate greater decision-making and mobility. For financial autonomy, women have access to financial resources are compared to those who do not.

Figure 5.1 Mean Autonomy in 2012



Similar to Wave II, at Wave III, respondents have a low amount of personal control in mobility decisions, with the average score equivalent to a response between “need permission” and “just inform them” (Mean=2.44, SD=.85) and the modal response is 2, indicating that most women need permission to go outside of the home. However, there is still variation with scores ranging from 1 to 4. Fifty-seven percent of women report having access to financial resources.

In general, respondents have a low amount of personal autonomy in household decisions, with the average score for respondents participating in household decisions equivalent to participating on only two to three decisions (Mean=2.67, SD=2.69). That said, there is still variation with scores ranging from 0 to 10. For respondents and somebody else participating in household decisions, there is still a low yet slightly higher amount of participation with the average score equivalent to participating in three to four decisions (Mean=3.47, SD=2.88).

5.4 ELMPS 2012 Bivariate and Multivariate Modeling Building

Results from the ordinary least squares and logistic bivariate regression models predicting ever-married and married women's autonomy in 2012 are shown in Tables 5L.5 – 5L.8. Tables 5L.5 and 5L.6 show bivariate results for ever married women (N=8,719) and Tables 5L.7 and 5L.8 show bivariate results for married women (N=7,620). All individual and household determinants are significantly associated with at least three measures of autonomy, and most are associated with all four measures of autonomy. Overall, across both samples, in the bivariate analyses, individual and household determinants were significant, meriting further analyses of these relationships.

Results from the multivariate model building are shown in Tables 5L.9 – 5L.12. In each of Tables 5L.9 – 5L.12, for the sample of ever-married women, Model 6 is the multivariate model with all individual and household determinants. In line with the ELMPS 2006 analysis: Model 1 includes age, Model 2 accounts for education, Model 3 builds further with the addition of all the marriage variables, Model 4 includes employment, Model 5 accounts for the location of birth and current region, and Model 6 is the final multivariate model with the addition of household wealth and household size. For the sample of married women, Table 5L.13 shows the full multivariate models with the addition of the variables related to the husband for the sample of married women.

5.4a Individual Participation in Household Decision-Making

Model 6 shows that for individual participation in household decision-making, age is associated with making more decisions as for each year older a woman is, she reports 0.085 higher participation ($p < 0.001$). Interestingly, women who have an intermediate or higher education make 0.46 fewer household decisions ($p < 0.01$) compared to those with a primary education. As expected, women who are separated make 2.71 more household decisions

($p < 0.001$). For women who did not report on their dowry values compared to those with no amount of dowry, individual participation in household decisions is lower by 0.23 ($p < 0.001$). Women who have some dowry compared to none also make 0.22 fewer household decisions. Women who did not respond to the question of being related to their husband, make 0.72 fewer household decisions compared to those who are not related to their husbands. Those who have ever worked compared to those who have not, participation is higher by 0.41 ($p < 0.001$). Those who are currently unemployed compared to those who are currently employed make 0.39 more household decisions. None of the remaining individual level determinants are significantly associated with individual household decision-making.

For household determinants, for those who live in Alexandria compared to Cairo are associated with less participation in household decisions ($p < 0.001$). Interestingly, those in both urban Lower and Upper Egypt compared to Cairo make fewer individual household decisions ($p < 0.001$). For women in the middle wealth households compared to the poorest households, participation in household decisions is consistently lower ($p < 0.001$). Model 6 explains 13% of the variance in women's individual household decision-making. However, Model 5, which excludes household wealth and size, has a smaller BIC (40969) implying a better fit.

5.4b Joint Participation in Household Decision-Making

Model 6 shows that higher education is significantly associated with joint participation in household decision-making (see Table 5L.10). For women with an intermediate or higher education compared to no education, joint participation in household decisions is higher by 0.35 ($p < 0.001$). This is similar to the results found in Aim 1 with the 2006 sample of women. Also similar to 2006 results, women who are separated also have 3.22 lower joint participation in household decision-making ($p < 0.001$). For women who have reported some dowry compared to

those who report no dowry, joint participation in household decisions are higher by 0.33 ($p < 0.001$). These are the same individual determinants that are significant in the multivariate models for the 2006 sample of ever married women.

For household determinants, for those who live in urban Lower Egypt compared to greater Cairo, joint participation in household decisions is higher by 0.36 ($p < 0.001$). For joint participation, even when controlling on other factors, household wealth is an important predictor. For women in wealthier households compared to the poorest households, joint participation is consistently higher and for the wealthiest households joint participation is greater by 0.46 ($p < 0.001$), all else held equal. Model 6 explains 10% of the variance in joint decision-making.

5.4c Mobility

In Table 5L.11, Model 6 shows that for mobility, age is associated with mobility as for each year older a woman is, she reports slightly more mobility or 0.021 greater mobility ($p < 0.001$). Women with intermediate or higher education are associated with less mobility compared to women with a primary education, all else held equal. Women who are separated also have 0.22 greater mobility ($p < 0.001$). Being 18 years or older at marriage is associated with less mobility ($p < 0.05$). Women who are related to their husbands have less mobility compared to those who are not related ($p < 0.001$). Similar to the results for the 2006 sample of ever-married women, for those who are employed compared to those who are not employed, mobility is greater by 0.13 ($p < 0.001$) and those who are retired compared to currently employed have less mobility ($p < 0.05$). None of the remaining individual level determinants are significantly associated with mobility. For household determinants, those who live in Alexandria and urban and rural Upper Egypt compared to Cairo are associated with less mobility ($p < 0.001$). Similar to

the 2006 results, for women in the wealthiest households compared to the poorest households, mobility is lower by 0.13 ($p < 0.001$).

5.4d Financial Autonomy

In Table 5L.12, Model 6 shows the final multivariate logistic regression model of financial autonomy. Age is associated with access to financial resources, as for each year older a woman is, she has 1.03 greater odds of financial autonomy ($p < 0.001$). Women who are related to their husbands have 16% less odds of access to financial resources compared to women who are not related to their husbands, all else held equal. Women who have ever worked have 47% greater odds of access to financial resources compared to those who have never worked ($p < 0.001$). For household determinants, women born in urban areas have 28% greater odds of financial autonomy compared to women in rural areas ($p < 0.001$). Women in all regions of Egypt besides greater Cairo have lower odds of financial autonomy. Women in larger households also have 10% lower odds of access to financial resources ($p < 0.001$).

5.4e Multivariate Models for Married Women with Spouses

Table 5L.13 shows the OLS and Logistic regression results for final models for the sample of married women with spouses in 2012 ($N = 7,620$). The individual and household level determinants exhibit similar relationships to those seen in the results for the sample of ever married women (see Tables 5L.9 – 5L.12). Interestingly, the addition of the spouse variables does not affect the relationships between the individual and household level determinants of women's autonomy.

For the spouse characteristics, husband's age is only associated with financial autonomy with women who have older husbands having 1% lower odds of being financially autonomous ($p < 0.01$). Similar to women's education, husband's education is also negatively associated with

autonomy. Women who have husbands with intermediate or higher education make fewer household decisions ($p < 0.001$), have less mobility ($p < 0.001$), and less financial autonomy ($p < 0.05$) compared to women with husbands who have a primary education. Husband's religion is only associated with participation in household decisions with women with Christian husbands reporting less individual participation in household decisions and greater joint participation in household decisions compared to women with Muslim husbands ($p < 0.05$).

Depending on how women's autonomy is defined, there is variation in the significance of individual and household determinants. However, across all outcomes and both samples, age and region or the location of the households in Egypt is associated with autonomy.

5.5 ELMPS 2012 Multilevel Models

5.5a Ever Married Women Multilevel Models

Table 5L.14 shows the results of all multilevel OLS and logistic regression models predicting individual and joint household decision-making, mobility, and financial autonomy for ever-married women in 2012. My results show that across every model, the variance in women's autonomy is due to differences between clusters. Likelihood-ratio test comparing the multilevel model with a standard regression model confirms that the multilevel model is preferred. This is true across all the outcomes. Likelihood-ratio tests favored three level models; however, conceptually, there is little difference between the two level models of individuals and PSU (or clusters) and individuals, PSU, and governorates. The intraclass correlation coefficients support the two level models as the ICC's are between .09 and .14 suggesting that membership in particular communities is a determinant of women's autonomy. There are 462 groups an average of 6 observations per group. Importantly, PSU's in 2012 are based on the original sample PSU so while they may capture a woman's current community; they are interpreted as the women's communities of origin.

Across all autonomy outcomes, age is consistently associated with greater autonomy ($p < 0.001$) (see Table 5L.14). Results for individual decision-making and mobility indicate that higher education is associated with less autonomy, once other factors are held constant. However, higher education is associated with women participating in more joint household decisions ($p < 0.001$). By contrast and similar to the 2006 multilevel results, once controls for other social and economic factors are introduced, I find no statistically significant difference by the mother's educational attainment. As expected, current marital status is significantly associated with women's autonomy, holding all else constant. Women who are separated participate in two times less joint decisions and have 67% less odds of financial autonomy compared to those who are married ($p < 0.001$). Yet interestingly, those who are separated have significantly higher mobility and individual decision-making than those who are married ($p < 0.001$). This result is consistent with the notion that something about marriage affects women's autonomy within the household.

While having a dowry was significant in the multivariate models, it is only significant for joint participation in decision-making in the multilevel models. This makes sense as the variance in joint participation, is comprised of within group variation in dowry (i.e., variation in dowries among individuals in the same PSU) and between group variation in dowries (i.e., variation in dowries among the PSUs in the study). Women who have some dowry have 0.31 greater participation in joint household decisions compared to women who have no dowry ($p < 0.001$). Women who are related to their husbands have 15% odds of lower access to financial resources compared to women who are not related to their husbands ($p < 0.001$). Having ever worked is significantly associated with more individual decision-making and mobility ($p < 0.05$) and with 33% more financial autonomy, all else held constant.

Among the household characteristics, similar to the 2006 cross sectional results, the current region of the household is related most consistently to all women's autonomy outcomes. Since the region variable is a combination of the women's location and the urbanicity of that location, it shows that women in rural Upper Egypt are consistently associated with less autonomy compared to women in Greater Cairo, all else held constant. In fact, women in rural Upper Egypt have a quarter of a point lower mobility, participate in one less household decision, and have 56% lower odds of financial autonomy compared to women in Greater Cairo ($p < 0.001$). Women in rural Lower Egypt also have lower autonomy compared to women in Greater Cairo. These women have significantly lower individual participation in household decisions and 44% lower odds of financial autonomy, all else constant. Women in urban Upper Egypt also have less individual participation in household decision-making, less mobility, and lower odds of financial autonomy compared to women in Greater Cairo.

Household wealth is significantly associated with both individual and joint household decisions. As compared to the poorest households, women in the middle wealth and higher households have less individual participation in decision-making, but also greater joint participation in household decisions ($p < 0.001$). Women in the richest households also have less mobility compared to women in the poorest households, all else held constant ($p < 0.001$). Household size is only associated with individual participation in household decisions and financial autonomy. All else held constant, those in larger households have less access to financial resources, but participate in more frequently in household decisions ($p < 0.05$). In the multilevel models, when considering both the within and between group variation, age, current marital status, and region are significantly associated with all autonomy outcomes.

5.5b Married Women Multilevel Models

Table 5L.15 shows the results of all multilevel OLS and logistic regression models predicting individual and joint household decision-making, mobility, and financial autonomy for married women in 2012. When the characteristics of husbands are included in the multilevel models of autonomy in 2012, the relationships between the individual and household determinants and autonomy outcomes are essentially the same as the results as for ever married women in 2012 (see Tables 5L.14 and 5L.15). A comparison of multilevel models of combined decision-making and individual and joint decision making can be found in the appendix (see Table 5A.4). Again, age and region are consistently significantly associated with women's autonomy. Again, married women in Upper Egypt have lower autonomy compared to married women in Greater Cairo, and married women in rural regions have less autonomy than married women in Greater Cairo.

Husband's education is significantly associated with women's autonomy as women whose husband's have an intermediate or higher education make less individual household decisions ($p < 0.001$), more joint decisions ($p < 0.05$), and have less mobility ($p < 0.01$) compared to those whose husbands have a primary education. Women whose husband's are out of the labor force participate in less joint decisions and have less mobility, seemingly because these husbands are at home more often ($p < 0.01$). Women whose husbands are unemployed have 51% lower odds of access to financial resources compared to women who have employed husbands ($p < 0.001$). Community membership explains between 8 and 14% of the variance in women's autonomy.

5.6 ELMPS 2006 – 2012 Panel Sample Characteristics

5.6a Characteristics of Panel of Married Women in 2006

Descriptive statistics for my primary ELMPS 2006 – 2012 analytic samples are presented in Tables 5L.17 and 5L.18. The first sample of women from the 2006 and 2012 ELMPS consists

of 4,575 women who were married and between the ages of 15 and 49 in 2006. In 2006, there were 5,735 of these women, and 1,160 were lost to follow up by 2012. The descriptive characteristics of the 5,735 women in 2006, those 1,160 lost to follow up, and the 4,575 women in 2012 are all included in Table 5L.17. There are 399 married women in the 2006 panel that were excluded because they do not have spouses in the ELMPS data. Since variables on the spouses are used as covariates, these women are excluded from the final sample of married women from 2006 (N=4,575). The second sample includes 6,594 women who were between the ages of 15 to 49 in 2006 and married by 2012. These women comprise a second analytic sample for the ELMPS 2006 – 2012, and their descriptive characteristics are shown in Table 5L.18.

Respondents' average age in 2006 is 32.2 years, and 76% were married after the age of 18. About 32% of these women are related to their husbands, most commonly as first cousins. Thirty-nine percent of these women report not receiving a dowry, while 35% report receiving some amount. Thirty-two percent of these women have a secondary education, but 40% also report having no education. Only 24% of the women are currently employed.

For household level variables, 54% of the women live in rural areas currently, and 56% lived in rural areas at birth. The average household size is 5.48 members. A third of the sample of women live in rural lower Egypt and a quarter live in rural upper Egypt. Only 10% are in the greater Cairo area. Those who were lost to follow up are mostly younger, higher educated women from the greater Cairo area. Households are fairly evenly distributed across assets/wealth categories with a fifth falling into each category. Since these women are all married, heads of household are all reported as male.

The average age of these women's husbands is 39 years, and the average age difference is seven years. Thirty-two percent of spouses have no education, and 50% have a secondary

education or higher. Close to 100% of spouses report having ever worked, and 96% are currently employed. Only 7% of spouses have ever migrated outside of Egypt for work. As expected spouses that were lost to follow up are also younger and more educated men.

Table 5L.17 shows the summary statistics for measures of autonomy and number of births in 2006 for the women who were 15 to 49 years in 2006 and married by 2006 and those lost to follow up. In general, respondents have a low amount of personal power in household decisions, with the average score for respondents participating in household decisions equivalent to participating on only two to three decisions (Mean=2.49, SD=2.25). That said, there is still variation with scores ranging from 0 to 10. For respondents and somebody else participating in household decisions, there is still a low yet slightly higher amount of participation with the average score equivalent to participating in three to four decisions (Mean=3.56, SD=2.64).

Respondents have a low amount of personal control in mobility decisions, with the average score equivalent to a response between “need permission” and “just inform them” (Mean=2.05, SD=0.68) and the modal response is 2, indicating that most women need permission to go outside of the home. At Wave II, on average, women feel anywhere between indifferent to average to the statements regarding gender norms (Mean=3.73, SD=0.56). The modal score is closer to average (3.82); however, there is significant variation and responses range from strongly disagree to strongly agree. For attitudes towards domestic violence, respondents have slightly negative attitudes with the average score indicating agreement that a husband is justified in beating his wife on at least a couple items since higher scores indicate a greater belief in domestic violence (Mean=2.09, SD=2.07). These women have had an average of close to three births (Mean=2.94, SD=2.31).

5.6b Characteristics of Panel of Ever Married Women by 2012

Table 5L.18 shows the sample characteristics for women ages 15 to 49 in 2006 and ever married by 2012. The average age of these women is 30 years, and as expected, compared to the women married in 2006, these women are younger with 35% between the ages of 15 and 24. For autonomy, respondents have a low amount of personal power in household decisions, with the average score for respondents participating in household decisions equivalent to participating on only two to three decisions (Mean=2.38, SD=2.25). This is slightly lower than the sample of women married in 2006 who have a mean of 2.49. For respondents and somebody else participating in household decisions, while women who were married in 2006 participated jointly in three to four household decisions, women who are ever married by 2012 only participate in two to three decisions (Mean=2.88, SD=2.67).

Twenty-one percent of these women are married between 2006 and 2012, and 92% are married at the 2012 round of the survey. Eighty percent of respondents are married when 18 years or older. The average marriage process from engagement to marriage takes 8.3 months. About 55% of this sample lives in rural areas and has since birth. The remaining sample characteristics are similar to the sample of women married in 2006 (see Table 5L.18).

Table 5L.19 shows the summary statistics for the measures of autonomy in 2006 for the women who were 15 to 49 years in 2006 and ever had been married by 2012. Ever married women in 2012 report a low amount of personal control in mobility decisions in 2006, with the average score equivalent to a response between “cannot go alone” and “need permission” (Mean=1.94, SD=0.77), indicating that most women need permission to go outside of the home. Only eighteen percent of women report having access to financial resources. At Wave II, on

average, women feel anywhere between indifferent to average to the statements regarding gender norms (Mean=3.78, SD=0.55).

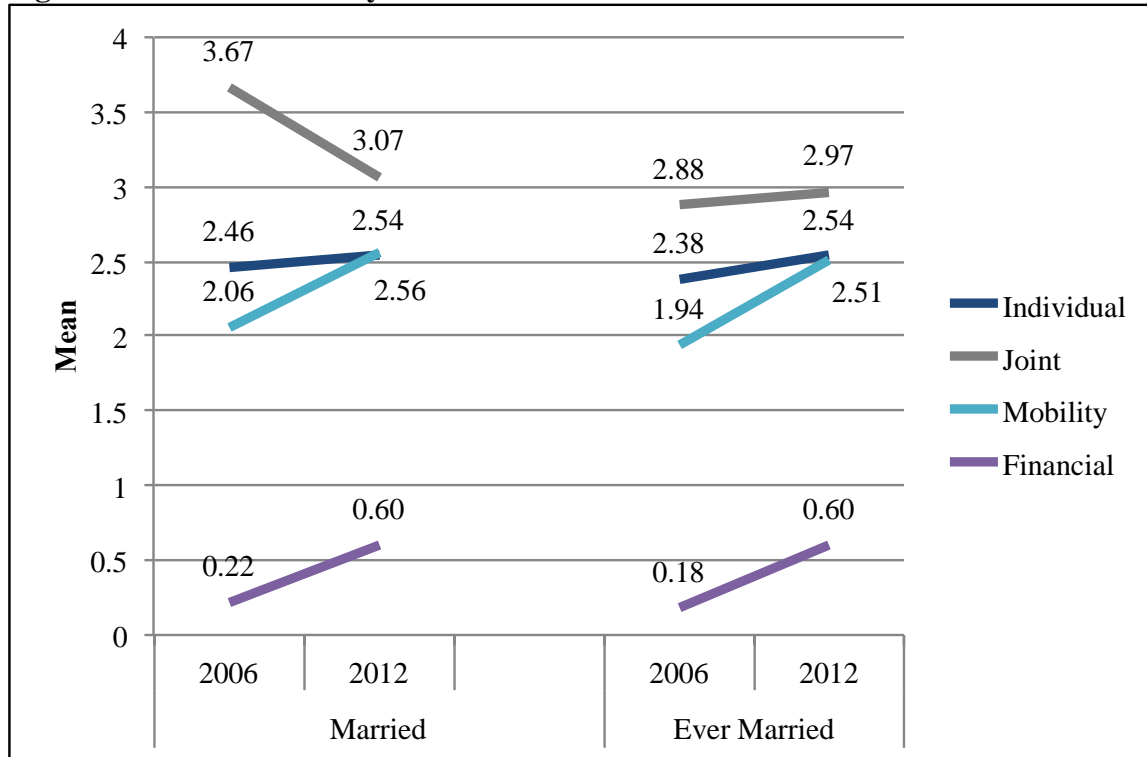
5.7 ELMPS 2012 Autonomy Summary Statistics

Table 5L.20 shows the summary statistics for all the study scales and outcome variables in 2012 for both samples. At Wave III, respondents have a low amount of personal control in mobility decisions, with the average score equivalent to a response between “need permission” and “just inform them” and the modal response is 2, indicating that most women need permission to go outside of the home. However, there is still variation with scores ranging from 1 to 4. Sixty percent of married women and ever married women report having access to financial resources. In general, respondents have a low amount of personal power in household decisions, with the average score for respondents participating in household decisions equivalent to participating on only two to three decisions. That said, there is still variation with scores ranging from 0 to 10. For respondents and somebody else participating in household decisions, there is still a low yet slightly higher amount of participation with the average score equivalent to participating in around three decisions (married women Mean=3.07, SD=3.04 and ever married women Mean=2.97, SD=2.99).

Table 5L.21 shows a side by side comparison of autonomy in 2006 and 2012. Figure 5.2 shows the means of autonomy over time for both ever married and married women. For married women, individual household decision-making increases slightly over time (Mean=2.46 in 2006 and Mean=2.54 in 2012). For married women, joint participation in household decision-making declines slightly over time from an average of 3.67 decisions to an average of 3.07 decisions in 2012. However, for ever married women, joint participation increases over time from 2.88 decisions in 2006 to 2.97 decisions in 2012. Mobility increases over time for both samples. Notably, in 2006, 22% of married women have access to financial resources, and by 2012, 60%

of the women report having access to financial resources. The same is true for ever married women.

Figure 5.2 Mean Autonomy in 2006 and 2012 for Ever Married and Married Women



5.8 ELMPS 2006 – 2012 Multivariate and Multilevel Models

While the 2006 cross sectional results found in Chapter 4 and the 2012 cross sectional results found above consistently show similar individual and household determinants of women’s autonomy, as addressed in Chapter 1, it is important to consider both changes in women’s autonomy over time and how autonomy in 2006 could affect autonomy in 2012. The longitudinal results of women’s autonomy over time, using the 2006 measures of autonomy to predict the 2012 autonomy outcomes are found in Tables 5L.22 – 5L.25.

Tables 5L.22 and 5L.23 show the results of all OLS and logistic regression models predicting household decision-making, mobility, and financial autonomy for both samples.

Tables 5L.24 and 5L.25 show the multilevel results for both samples. Results were also checked

for a sample of ever married women in 2006 to account for women who were separated in 2006. These results are the same as for the two analytic samples, and those results can be found in the Appendix (Appendix Table 5A.5 and 5A.6). The intraclass correlation coefficients support these models as the ICC's are between .03 and .14 suggesting that membership in particular communities is a determinant of women's autonomy over time. Close to 10% of the variance in women's autonomy is captured by the multilevel approach. There are 462 groups an average of 6 observations per group. These ICC's are lower than those found for the 2006 and 2012 cross sectional analyses; however, given that some of the variance is explained by group membership, the multilevel approach is supported. Also, given that the multivariate and multilevel results are identical, the multilevel results are presented.

5.8a Multilevel Models for Panel of Married Women in 2006

Some measures of autonomy in 2006 are associated with autonomy in 2012 (see Table 5L.24). The relationship between autonomy and combined decision-making can be found in the appendix (Appendix Table 5A.7). Table 5L.24 shows that attitudes towards gender norms and domestic violence in 2006 is not associated with decision-making, mobility, or financial autonomy in 2012. Women's mobility in 2006 is associated with autonomy in 2012. For each additional reason a woman can leave the house in 2006, she has greater participation in household decisions, greater mobility, and 32% higher odds of financial autonomy in 2012 ($p < 0.001$), all else held equal.

Women's participation in household decision-making in 2006 is associated with participation in household decision making in 2012 as for each additional decision a woman participates in 2006, she makes 0.15 more decisions in 2012, all else held constant ($p < 0.001$). Women who make more individual decisions in 2006 also have greater mobility in 2012 and 6% higher odds of being financially autonomous in 2012. Women who have greater joint

participation in household decision-making in 2006 also have greater autonomy in 2012. For each additional joint household decision in 2006, women have 0.066 greater individual participation in household decision-making, and 6% higher odds of access to financial resources in 2012 ($p < 0.001$). Interestingly, for married women in 2006, financial autonomy in 2006 is not associated with autonomy in 2012.

Importantly, to answer the third research question for the second aim, fertility or number of births in 2006 is used as a predictor of women's autonomy in 2012. Results indicate that for each additional birth reported in 2006, woman make 0.11 more individual household decisions, and have 0.035 more mobility in 2012 ($p < 0.001$). For each additional birth in 2006, women have 0.067 greater participation in joint household decision-making in 2012 ($p < 0.05$). Number of births is not associated with financial autonomy.

As for the remaining determinants of autonomy, when looking at the relationship with autonomy over time, the relationship between age and autonomy changes. In contrast to the cross-sectional results, as women get older, they make fewer individual and joint household decisions, and have less mobility. Women who are older than 18 at marriage make more individual and joint household decisions and have more mobility compared to those who are younger than 18 at first marriage ($p < 0.05$). Not surprisingly women who have ever worked have 0.23 greater mobility ($p < 0.001$) and 62% more financial autonomy ($p < 0.01$).

Once again, these models of autonomy over time show that region, which considers both urbanicity and location is a significant predictor of women's autonomy (see Table 5L.24). Women in rural and urban Upper Egypt have less autonomy over time compared to women in Greater Cairo. Women in rural areas participate in close to one less household decision compared to women in Greater Cairo. Women in rural Upper Egypt have about 61% less odds of

being financial autonomous over time than women in Greater Cairo. Household wealth is not a significant determinant of women's autonomy over time. Household size is only associated with financial autonomy as for every additional member of a household, women have 6% less financial autonomy ($p < 0.01$).

As seen in the cross sectional models, spousal characteristics are largely insignificant. Similar to the 2006 and 2012 results, women with spouses with a higher education have less mobility compared to those with spouses with a primary education ($p < 0.001$). Spousal migration is only significant for joint decision-making. Women whose husbands have migrated participate in 0.47 more joint decisions as compared to women whose husbands have not migrated.

5.8b Multilevel Models for Panel of Ever Married Women by 2012

Table 5L.25 shows the multilevel models of decision-making, mobility, and financial autonomy for the sample of women who are ever married by 2012 ($N=6,594$). For this sample, attitudes towards domestic violence and births are not included as determinants because these questions were only asked of married respondents in 2006. Similar to the results for married women, for each additional individual household decision an ever married woman makes in 2006, she has greater participation in household decision-making ($p < 0.001$), greater mobility ($p < 0.001$), and 6% more financial autonomy ($p < 0.01$). Women who have greater joint participation in household decision-making in 2006 also have greater autonomy in 2012. For each additional joint household decision in 2006, women make 0.12 more individual household decisions ($p < 0.001$). Multilevel models of combined household decision-making in 2012 for ever married women can be found in the Appendix (see Appendix Table 5A.8).

Women's mobility in 2006 is associated with autonomy in 2012. For each additional reason a woman can leave the house in 2006, she has greater participation in household

decisions, greater mobility, and 24% higher odds of financial autonomy in 2012 ($p < 0.001$), all else held equal. Similar to the results for married women, financial autonomy in 2006 is not associated with autonomy in 2012. Unlike the results for married women, attitudes towards gender norms is associated with less individual decision-making ($p < 0.001$).

Being separated is associated with all measures of autonomy. Separated women make close to two additional individual household decisions, two less joint household decisions, have greater mobility, and 82% more financial autonomy ($p < 0.001$). Unlike the models for married women, age at first marriage is not significantly associated with autonomy for ever married women. The remaining determinants exhibit similar relationships to those found in the multilevel models of autonomy over time for married women (see Tables 5L.24 and 5L.25).

5.9 Summary of Key Findings

This study is the first longitudinal analysis of women's autonomy in Egypt, and the first to describe the individual and household determinants of women's autonomy over time, specifically for a sample of ever married and married women of reproductive age in Egypt. Additionally, this work considers whether fertility, often used as an outcome of autonomy, actually predicts later autonomy. Similar to aim one, analysis for aim two also uses a range of measures for autonomy, recognizing that each captures something different about a woman's experience. Hierarchical linear models indicate that membership in a particular Egyptian community is a determinant of and explains some of the variance in women's autonomy.

For both the 2012 cross sectional and the 2006 to 2012 longitudinal results, my hypothesis that household factors further explain women's autonomy is supported. Across all samples and autonomy outcomes, region of household is consistently associated with autonomy. As expected, the women in rural Upper Egypt, rural Lower Egypt, and urban Upper Egypt have less autonomy as compared to women in the Greater Cairo area. This is consistent with research

that shows that women in upper Egypt are significantly worse off across most women's health outcomes (Casterline et al. 2003; Yount and Li 2010). This is also consistent with the results in Chapter 4 for the 2006 cross section. Women in rural regions and in Upper Egypt have less autonomy. These areas tend to have more patriarchal views (Yount et al. 2000). If the 2006 and 2012 cross sectional analyses are compared, there are a few important regional changes in joint decision-making. In 2006, women in rural Upper and both rural and urban Lower Egypt participated in less joint decisions compared to women in Cairo. In 2012, married women in rural and urban Lower Egypt participated in more joint decisions compared to women in Cairo. In 2012, in certain regions, there may have been an increase in a woman's value to herself and the household without a commensurate increase in her personal autonomy and independence through individual decision-making and freedom of movement. Overall, in 2006, 2012, and over time from 2006 to 2012, the household region is associated with women's autonomy.

Importantly, my results show that across all samples and outcomes, the total variance in autonomy is due to differences in communities. There is a possibility that the measure of community as the PSU level, when it explains my variance in autonomy, is picking up the effects of omitted individual-level variables. However, given that many individual determinants of women's autonomy are included, this is unlikely. The significance of the clustering highlights the importance of the woman's location in her level of control and ability to exercise power in the household.

Perhaps the most interesting results is addressing the third hypothesis or whether fertility predictors women's autonomy later in life. For individual and joint decision-making and financial autonomy in 2012, married women in 2006, who had more births in 2006, have more autonomy in 2012. This finding has two key implications. First, from a methodological

standpoint, it highlights the problematic aspects of conducting cross sectional analyses of autonomy and fertility, as the relationship seems to go both ways. The second implication is that having children has meaningful affects on autonomy for women in Egypt and can be a source of household autonomy for these women.

In this chapter, I have evaluated empirical evidence for a relationship between individual and household characteristics and women's autonomy over time. I find support for several attributes of the household and most notably for the importance of the woman's location and fertility in her ability to exercise autonomy over time.

Chapter 5 Results Tables

Table 5L.1 Sample Descriptive Characteristics (Means (SE) or %) of Ever Married Women Ages 15 to 49 at Wave III, 2012 Egyptian Labor Market Panel Survey N=8,719

Key Variables	Unweighted	
	N	% or Mean (SD)
INDIVIDUAL VARIABLES		
Current Age in years		
15 - 19 yrs	307	3.52
20 - 24 yrs	1,782	20.44
25 - 29 yrs	2,255	25.86
30 - 34 yrs	1,667	19.12
35 - 39 yrs	1,148	13.17
40 - 44 yrs	777	8.91
45 - 49 yrs	783	8.98
Mean (SD)	8719	31.06 (8.10)
Marital Status		
Married	8,314	95.35
Separated/Divorced/Widow	405	4.65
Age at First Marriage		
Less than 18 years	1,608	18.44
18 years or older	7,111	81.56
Mean (SD)	8719	20.9 (4.04)
Value of Dowry		
No Response	2,529	29.01
No Amount	4,303	49.35
Some Amount	1,887	21.64
Marriage Process Duration (Months)	8719	10.9 (12.5)
Related to Husband		
No Response	1,588	18.21
No	5,004	57.39
Yes	2,127	24.39
Mother's Education		
None	148	1.7
Primary	6,904	79.18
Preparatory or Higher	1,667	19.12
Education		
None	2,503	28.71
Primary	682	7.82
Preparatory	595	6.82
Secondary	269	3.09
Technical Secondary	3,054	35.03
Intermediate or Higher	1,616	18.53
Years of Education	8,719	8.54 (5.34)
Ever Worked		
No	6,380	73.17
Yes	2,339	26.83
Currently Employed		
Employed	1,574	18.05
Unemployed	708	8.12
Out of Labor Force	6,437	73.83
HOUSEHOLD VARIABLES		
Current Setting		
Rural	5,095	58.44

Urban	3,624	41.56
Setting of Birth		
Rural	5,200	59.64
Urban	3,519	40.36
Household Size	8,719	3.62 (1.95)
Region		
Greater Cairo	793	9.1
Alexandria & Suez Canal	661	7.58
Urban Lower	979	11.23
Urban Upper	1,208	13.85
Rural Lower	2,649	30.38
Rural Upper	2,429	27.86
Household Wealth Index		
Poorest	1,634	18.74
Poorer	1,858	21.31
Middle	1,932	22.16
Richer	1,831	21
Richest	1,464	16.79

**Table 5L.2 Sample Descriptive Characteristics (Means (SE) or %) of Ever Married Women Ages 15 to 49 w/Spouses at Wave III, 2012 Egyptian Labor Market Panel Survey
N=7,620**

Key Variables	Unweighted	
	N	% or Mean (SD)
INDIVIDUAL VARIABLES		
Current Age in years		
15 - 19 yrs	263	3.61
20 - 24 yrs	1,554	21.3
25 - 29 yrs	1,964	26.92
30 - 34 yrs	1,429	19.59
35 - 39 yrs	937	12.84
40 - 44 yrs	624	8.55
45 - 49 yrs	524	7.18
Mean (SD)	7,295	30.6 (7.81)
Age at First Marriage (if ever married)		
Less than 18 years	1,288	17.66
18 years or older	6,007	82.34
Mean (SD)	7,295	21.0 (3.94)
Value of Dowry		
No Response	1,978	27.11
No Amount	3,720	50.99
Some Amount	1,597	21.89
Mean (SD)	7,295	11.3 (12.5)
Marriage Process Duration (Months) Related to Husband		
No Response	1,172	16.07
No	4,297	58.9
Yes	1,826	25.03
Mother's Education		
None	129	1.77
Primary	5,752	78.85
Preparatory or Higher	1,414	19.38
Education		
None	1,981	27.16
Primary	553	7.58
Preparatory	494	6.77
Secondary	226	3.1
Technical Secondary	2,626	36
Intermediate or Higher	1,415	19.4
Mean (SD)	7,295	8.74 (5.29)
Years of Education		
Ever Worked		
No	5,339	73.19
Yes	1,956	26.81
Currently Employed		
Employed	1,304	17.88
Unemployed	578	7.92
Out of Labor Force	5,413	74.2
HOUSEHOLD VARIABLES		
Current Setting		
Rural	4,194	57.49
Urban	3,101	42.51
Setting of Birth		
Rural	4,279	58.66
Urban	3,016	41.34
Mean (SD)	7,295	3.55 (1.93)

Region		
Greater Cairo	657	9.01
Alexandria & Suez Canal	576	7.9
Urban Lower	838	11.49
Urban Upper	1,046	14.34
Rural Lower	2,257	30.94
Rural Upper	1,921	26.33
Household Wealth Index		
Poorest	1,307	17.92
Poorer	1,556	21.33
Middle	1,628	22.32
Richer	1,551	21.26
Richest	1,253	17.18

Table 5L.3 Sample Descriptive Characteristics (Means (SE) or %) of Married Women's Husbands at Wave II, 2006 Egyptian Labor Market Panel Survey N=7,620

Key Variables	Unweighted	
	N	% or Mean (SD)
INDIVIDUAL VARIABLES		
Current Age in years		
15 - 19 yrs	11	0.15
20 - 24 yrs	310	4.25
25 - 29 yrs	1,422	19.49
30 - 34 yrs	1,656	22.7
35 - 39 yrs	1,355	18.57
40 - 44 yrs	980	13.43
45 - 49 yrs	768	10.53
50 or older	793	10.87
Mean (SD)	7,295	36.9 (9.07)
Difference in Age	7,295	6.47 (4.56)
Education		
None	1,654	22.67
Primary	817	11.2
Preparatory	409	5.61
Secondary	161	2.21
Technical Secondary	2,636	36.13
Intermediate or Higher	1,618	22.18
Years of Education	7,295	9.60 (4.91)
Difference in Years of Education	7,295	3.06 (3.36)
Ever Worked		
No	0	0
Yes	7,295	100
Currently Employed		
Employed	7,293	99.97
Unemployed	1	0.01
Out of Labor Force	1	0.01
Job Stability		
Permanent	5,289	72.5
Temporary	480	6.58
Seasonal	35	0.48
Intermittent	1,491	20.44
Religion		
No Response	1,172	16.07
Muslim	5,764	79.01
Christian	359	4.92

Table 5L.4 Summary Statistics: Primary Study Scales and Outcomes of Autonomy for Women 15 to 49 years old at Wave III, 2012 Egyptian Labor Market Panel Survey

Key Scales	Ever-Married Women N=8,719				Married Women N=7,620			
	N	Range	Mode	% or Mean (SD)	N	Range	Mode	% or Mean (SD)
AUTONOMY								
Household Decision-Making								
Individual Participation in Decisions	8,719	0 - 10	0.00	2.67 (2.69)	7,620	0 - 10	0.00	2.31 (2.33)
Joint Participation in Decisions	8,719	0 - 10	0.00	3.47 (2.88)	7,620	0 - 10	0.00	3.79 (2.82)
Mobility	8,719	0 - 4	2.00	2.44 (0.85)	7,620	0 - 4	2.00	2.40 (0.82)
Financial Autonomy	8,719	0 - 1	-	0.57 (0.50)	7,620	0 - 1	-	0.55 (0.50)

**Table 5L.5 OLS and Logistic Bivariate Regression Models Predicting Women's Autonomy of Ever Married Women Ages 15 to 49 at Wave III, 2012
Egyptian Labor Market Panel Survey**

Key Variables	Individual Decision-Making N=8,719		Joint Decision-Making N=8,719		Mobility N=8,719		Financial Autonomy N=8,719	
	OLS							
	b	(SE)	b	(SE)	b	(SE)	OR	(SE)
Age (yrs)	0.076***	(0.0035)	-0.0060	(0.0038)	0.016***	(0.0011)	1.04***	(0.0029)
Education (Ref=Primary)								
None	0.038	(0.12)	-0.19	(0.12)	-0.023	(0.037)	0.92	(0.080)
Preparatory	-0.37*	(0.15)	-0.17	(0.16)	-0.15**	(0.048)	0.71**	(0.080)
Secondary	-0.51**	(0.19)	0.36	(0.21)	-0.23***	(0.061)	0.82	(0.12)
Technical Secondary	-0.017	(0.11)	0.50***	(0.12)	-0.023	(0.036)	1.06	(0.090)
Intermediate or Higher	-0.23	(0.12)	0.99***	(0.13)	-0.12**	(0.039)	1.47***	(0.14)
Mother's Education (Ref=Primary)								
None	-0.38	(0.22)	1.16***	(0.24)	-0.20**	(0.071)	1.84***	(0.33)
Preparatory or Higher	0.051	(0.073)	0.41***	(0.079)	-0.079***	(0.023)	1.49***	(0.084)
Separated (Ref=Married)	3.21***	(0.13)	-3.26***	(0.14)	0.35***	(0.043)	1.56***	(0.17)
Older than 18 at First Marriage	-0.067	(0.074)	0.52***	(0.079)	-0.045	(0.024)	1.23***	(0.068)
Dowry (Ref=None)								
No Response	0.35***	(0.067)	-0.18*	(0.072)	0.054*	(0.021)	1.20***	(0.061)
Some	-0.32***	(0.074)	0.017	(0.080)	-0.037	(0.024)	0.76***	(0.042)
Marriage Process Duration (Months) Related to Husband (Ref=No)	-0.0082***	(0.0023)	0.012***	(0.0025)	-0.00057	(0.00073)	1.00	(0.0017)
No Response	0.82***	(0.077)	-0.44***	(0.083)	0.12***	(0.025)	1.52***	(0.092)
Yes	-0.22**	(0.069)	-0.28***	(0.075)	-0.10***	(0.022)	0.68***	(0.035)
Ever Worked	0.76***	(0.064)	0.18**	(0.070)	0.23***	(0.021)	1.96***	(0.100)
Employment (Ref=Employed)								
Unemployed	-0.37**	(0.12)	-0.060	(0.13)	-0.099**	(0.038)	0.54***	(0.050)
Retired	-0.76***	(0.075)	-0.19*	(0.081)	-0.26***	(0.024)	0.51***	(0.031)

Notes: *p<0.05, ** p<0.01, *** p<0.001. Standard errors in parentheses

Table 5L.6 OLS and Logistic Bivariate Regression Models Predicting Women's Autonomy of Ever Married Women Ages 15 to 49 at Wave III, 2012 Egyptian Labor Market Panel Survey

	Individual Decision-Making N=8,719		Joint Decision-Making N=8,719		Mobility N=8,719		Financial Autonomy N=8,719	
	OLS						Logistic	
	b	(SE)	b	(SE)	b	(SE)	OR	(SE)
Key Household Variables								
Current Location: Urban	0.38***	(0.058)	0.42***	(0.063)	-0.024	(0.019)	1.58***	(0.070)
Birth Setting: Urban	0.36***	(0.059)	0.43***	(0.063)	-0.012	(0.019)	1.64***	(0.073)
Household Size	0.072***	(0.015)	-0.12***	(0.016)	0.019***	(0.0047)	0.94***	(0.010)
Region (Ref=Greater Cairo)								
Alexandria & Suez Canal	-0.39**	(0.14)	0.23	(0.15)	-0.33***	(0.044)	0.82	(0.096)
Urban Lower	-0.57***	(0.13)	0.33*	(0.14)	0.057	(0.040)	0.73**	(0.077)
Urban Upper	-1.27***	(0.12)	0.025	(0.13)	-0.19***	(0.039)	0.35***	(0.035)
Rural Lower	-0.81***	(0.11)	0.21	(0.12)	0.041	(0.034)	0.48***	(0.043)
Rural Upper	-1.24***	(0.11)	-0.82***	(0.12)	-0.22***	(0.035)	0.30***	(0.027)
Household Wealth Index (Ref=Poorest)								
Poorer	-0.013	(0.091)	0.28**	(0.097)	0.012	(0.029)	1.11	(0.076)
Middle	-0.090	(0.090)	0.74***	(0.096)	0.025	(0.029)	1.33***	(0.090)
Richer	0.045	(0.091)	0.92***	(0.097)	0.0034	(0.029)	1.64***	(0.11)
Richest	0.22*	(0.097)	1.18***	(0.10)	-0.068*	(0.031)	1.97***	(0.15)

Notes: *p<0.05, ** p<0.01, *** p<0.001. Standard errors in parentheses

Table 5L.7 OLS and Logistic Bivariate Regression Models Predicting Women's Autonomy of Married Women Ages 15 to 49 w/Spouses at Wave III, 2012 Egyptian Labor Market Panel Survey

Key Variables	Individual Decision-Making N=7,620		Joint Decision-Making N=7,620		Mobility N=7,620		Financial Autonomy N=7,620	
			OLS				Logistic	
	b	(SE)	b	(SE)	b	(SE)	OR	(SE)
Age (yrs)	0.051***	(0.0034)	0.018***	(0.0042)	0.013***	(0.0012)	1.03***	(0.0032)
Education (Ref=Primary)								
None	-0.11	(0.11)	-0.15	(0.13)	-0.042	(0.038)	0.89	(0.086)
Preparatory	-0.33*	(0.14)	-0.25	(0.17)	-0.13**	(0.049)	0.71**	(0.089)
Secondary	-0.38*	(0.18)	0.39	(0.22)	-0.24***	(0.063)	0.84	(0.13)
Technical Secondary	-0.019	(0.11)	0.43***	(0.13)	-0.032	(0.037)	1.09	(0.10)
Intermediate or Higher	-0.19	(0.12)	0.92***	(0.14)	-0.13**	(0.040)	1.62***	(0.16)
Mother's Education (Ref=Primary)								
None	-0.30	(0.21)	1.06***	(0.25)	-0.21**	(0.072)	2.01***	(0.39)
Preparatory or Higher	0.083	(0.069)	0.43***	(0.083)	-0.086***	(0.024)	1.62***	(0.100)
Older than 18 at First Marriage	0.038	(0.071)	0.49***	(0.086)	-0.037	(0.025)	1.31***	(0.081)
Dowry (Ref=None)								
No Response	0.037	(0.064)	0.099	(0.078)	0.020	(0.022)	1.03	(0.058)
Some	-0.42***	(0.069)	0.050	(0.084)	-0.055*	(0.024)	0.73***	(0.044)
Marriage Process Duration (Months) Related to Husband (Ref=No)	-0.00075	(0.0022)	0.0060*	(0.0026)	0.00017	(0.00076)	1.00*	(0.0019)
No Response	0.39***	(0.076)	-0.044	(0.093)	0.062*	(0.026)	1.24**	(0.084)
Yes	-0.20**	(0.065)	-0.27***	(0.079)	-0.10***	(0.022)	0.64***	(0.036)
Ever Worked	0.58***	(0.061)	0.35***	(0.074)	0.21***	(0.021)	1.99***	(0.11)
Employment (Ref=Employed)								
Unemployed	-0.21	(0.12)	-0.25	(0.14)	-0.085*	(0.040)	0.54***	(0.055)
Out of Labor Force	-0.49***	(0.071)	-0.41***	(0.087)	-0.24***	(0.025)	0.52***	(0.034)
Husband's Age (yrs)	0.036***	(0.0030)	0.010**	(0.0036)	0.0092***	(0.0010)	1.02***	(0.0027)
Husband's Education (Ref=Primary)								
None	-0.14	(0.099)	-0.10	(0.12)	0.00039	(0.034)	0.85	(0.073)
Preparatory	0.024	(0.14)	0.29	(0.17)	0.030	(0.048)	1.24	(0.15)
Secondary	-0.56**	(0.20)	0.11	(0.24)	-0.12	(0.069)	0.73	(0.13)
Technical Secondary	-0.36***	(0.093)	0.34**	(0.11)	-0.096**	(0.032)	0.85*	(0.068)
Intermediate or Higher	-0.34***	(0.099)	0.77***	(0.12)	-0.15***	(0.034)	1.24*	(0.11)
Husband's Employment (Ref=Employed)								
Unemployed	0.70	(2.32)	2.19	(2.82)	-0.13	(0.070)	0.58	(0.29)
Out of Labor Force	0.70	(2.32)	-3.81	(2.82)	-0.11	(0.064)	0.58	(0.29)
Husband's Religion (Ref=Muslim)								
No Response	0.42***	(0.074)	0.056	(0.090)	0.086***	(0.025)	1.40***	(0.092)
Christian	-0.44***	(0.13)	0.32*	(0.15)	-0.12**	(0.044)	0.83	(0.090)

Notes: *p<0.05, ** p<0.01, *** p<0.001. Standard errors in parentheses

Table 5L.8 OLS and Logistic Bivariate Regression Models Predicting Women's Autonomy of Married Women Ages 15 to 49 w/Spouses at Wave III, 2012 Egyptian Labor Market Panel Survey

Key Household Variables	Individual Decision-Making N=7,620		Joint Decision-Making N=7,620		Mobility N=7,620		Financial Autonomy N=7,620	
	OLS						Logistic	
	b	(SE)	b	(SE)	b	(SE)	OR	(SE)
Current Location: Urban	0.37***	(0.055)	0.38***	(0.067)	-0.034	(0.019)	1.68***	(0.081)
Birth Setting: Urban	0.38***	(0.055)	0.39***	(0.067)	-0.022	(0.019)	1.74***	(0.084)
Household Size	0.026	(0.014)	-0.088***	(0.017)	0.014**	(0.0049)	0.92***	(0.011)
Region (Ref=Greater Cairo)								
Alexandria & Suez Canal	-0.34**	(0.13)	0.11	(0.16)	-0.31***	(0.045)	0.77*	(0.099)
Urban Lower	-0.55***	(0.12)	0.22	(0.15)	0.069	(0.041)	0.70**	(0.081)
Urban Upper	-1.31***	(0.11)	-0.15	(0.14)	-0.20***	(0.039)	0.30***	(0.033)
Rural Lower	-0.78***	(0.10)	0.11	(0.12)	0.041	(0.035)	0.43***	(0.042)
Rural Upper	-1.31***	(0.10)	-0.90***	(0.13)	-0.21***	(0.035)	0.25***	(0.025)
Household Wealth Index (Ref=Poorest)								
Poorer	0.071	(0.087)	0.20	(0.10)	0.0015	(0.030)	1.12	(0.084)
Middle	0.045	(0.086)	0.71***	(0.10)	0.040	(0.030)	1.36***	(0.10)
Richer	0.12	(0.087)	0.91***	(0.10)	-0.012	(0.030)	1.72***	(0.13)
Richest	0.28**	(0.092)	1.18***	(0.11)	-0.086**	(0.032)	2.07***	(0.17)

Notes: *p<0.05, ** p<0.01, *** p<0.001. Standard errors in parentheses

Table 5L.9 Betas and Standard Errors from Ordinary Least Squares Regression Models Predicting Women's Autonomy: Household Decision-Making (0 - 10, higher values = more decision making) of Ever Married Women Ages 15 to 49 at Wave III, 2012 Egyptian Labor Market Panel Survey N=8,719

Key Variables	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6	
	b	(SE)	b	(SE)	b	(SE)	b	(SE)	b	(SE)	b	(SE)
Age (yrs)	0.076***	(0.0035)	0.079***	(0.0036)	0.097***	(0.0053)	0.092***	(0.0053)	0.084***	(0.0053)	0.085***	(0.0054)
Education (Ref=Primary)												
None			-0.25*	(0.11)	-0.24*	(0.11)	-0.24*	(0.11)	-0.12	(0.11)	-0.16	(0.11)
Preparatory			-0.27	(0.15)	-0.25	(0.14)	-0.22	(0.14)	-0.19	(0.14)	-0.18	(0.14)
Secondary			-0.30	(0.19)	-0.18	(0.18)	-0.20	(0.18)	-0.17	(0.18)	-0.13	(0.18)
Technical Secondary			-0.011	(0.11)	0.031	(0.11)	-0.046	(0.11)	-0.024	(0.11)	0.0035	(0.11)
Intermediate or Higher			-0.35**	(0.12)	-0.31*	(0.12)	-0.49***	(0.13)	-0.51***	(0.13)	-0.46***	(0.13)
Mother's Education (Ref=Primary)												
None			-0.041	(0.23)	-0.067	(0.22)	-0.12	(0.22)	-0.29	(0.22)	-0.29	(0.22)
Preparatory or Higher			0.19*	(0.078)	0.14	(0.076)	0.12	(0.075)	0.032	(0.076)	0.048	(0.077)
Separated (Ref=Married)					2.78***	(0.13)	2.74***	(0.13)	2.71***	(0.13)	2.71***	(0.13)
Older than 18 at First Marriage					-0.17*	(0.077)	-0.16*	(0.076)	-0.22**	(0.076)	-0.22**	(0.076)
Dowry (Ref=None)												
No Response					-0.33***	(0.093)	-0.31***	(0.093)	-0.23*	(0.093)	-0.23*	(0.093)
Some					-0.37***	(0.071)	-0.34***	(0.070)	-0.21**	(0.072)	-0.22**	(0.072)
Marriage Process Duration (Months)					0.0044	(0.0024)	0.0040	(0.0024)	0.00089	(0.0025)	0.0010	(0.0025)
Related to Husband (Ref=No)												
No Response					-0.69***	(0.14)	-0.67***	(0.13)	-0.67***	(0.13)	-0.72***	(0.14)
Yes					-0.14*	(0.067)	-0.13	(0.067)	-0.033	(0.067)	-0.043	(0.067)
Ever Worked							0.51***	(0.098)	0.41***	(0.097)	0.41***	(0.097)
Employment (Ref=Employed)												
Unemployed							0.48***	(0.14)	0.39**	(0.14)	0.39**	(0.14)
Retired							0.011	(0.11)	-0.14	(0.11)	-0.14	(0.11)
Birth Setting: Urban									0.14	(0.098)	0.15	(0.098)
Region (Ref=Greater Cairo)												
Alexandria & Suez Canal									-0.33*	(0.13)	-0.34*	(0.13)
Urban Lower									-0.50***	(0.12)	-0.51***	(0.12)
Urban Upper									-1.12***	(0.12)	-1.16***	(0.12)
Rural Lower									-0.59***	(0.13)	-0.61***	(0.13)
Rural Upper									-0.87***	(0.13)	-0.94***	(0.14)
Household Wealth Index (Ref=Poorest)												
Poorer											-0.072	(0.087)
Middle											-0.22*	(0.090)
Richer											-0.20*	(0.098)
Richest											-0.18	(0.11)
Household Size											0.021	(0.018)
R-squared	0.053		0.056		0.112		0.120		0.132		0.133	
BIC	41519.0		41552.4		41088.3		41038.0		40969.1		41005.4	
F	488.9		65.0		73.0		65.7		55.1		45.9	
df_m	1		8		15		18		24		29	
df_r	8717		8710		8703		8700		8694		8689	

Notes: *p<0.05, ** p<0.01, *** p<0.001. Standard errors in parentheses

Table 5L.10 Betas and Standard Errors from Ordinary Least Squares Regression Models Predicting Women's Autonomy: Joint Household Decision-Making (0 - 10, higher values = more decision making) of Ever Married Women Ages 15 to 49 at Wave III, 2012 Egyptian Labor Market Panel Survey N=8,719

Key Variables	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6	
	b	(SE)	b	(SE)	b	(SE)	b	(SE)	b	(SE)	b	(SE)
Age (yrs)	-0.0060	(0.0038)	0.00084	(0.0039)	0.028***	(0.0058)	0.027***	(0.0058)	0.020***	(0.0059)	0.018**	(0.0059)
Education (Ref=Primary)												
None			-0.19	(0.12)	-0.17	(0.12)	-0.17	(0.12)	-0.014	(0.12)	0.061	(0.12)
Preparatory			-0.17	(0.16)	-0.10	(0.16)	-0.10	(0.16)	0.0042	(0.15)	-0.026	(0.15)
Secondary			0.35	(0.21)	0.28	(0.20)	0.29	(0.20)	0.30	(0.20)	0.18	(0.20)
Technical Secondary			0.50***	(0.12)	0.42***	(0.12)	0.45***	(0.12)	0.42***	(0.12)	0.35**	(0.12)
Intermediate or Higher			0.95***	(0.14)	0.80***	(0.14)	0.83***	(0.14)	0.79***	(0.14)	0.65***	(0.14)
Mother's Education (Ref=Primary)												
None			0.48	(0.25)	0.48*	(0.24)	0.45	(0.24)	0.36	(0.24)	0.26	(0.24)
Preparatory or Higher			0.012	(0.085)	0.064	(0.083)	0.063	(0.083)	0.015	(0.083)	-0.044	(0.085)
Separated (Ref=Married)					-3.26***	(0.14)	-3.26***	(0.14)	-3.23***	(0.14)	-3.22***	(0.14)
Older than 18 at First Marriage					0.027	(0.084)	0.026	(0.084)	-0.070	(0.084)	-0.078	(0.084)
Dowry (Ref=None)					0	(.)	0	(.)	0	(.)	0	(.)
No Response					0.11	(0.10)	0.11	(0.10)	0.21*	(0.10)	0.20*	(0.10)
Some					0.13	(0.077)	0.12	(0.077)	0.32***	(0.079)	0.33***	(0.079)
Marriage Process Duration (Months) Related to Husband (Ref=No)					0.0070**	(0.0027)	0.0071**	(0.0027)	0.0027	(0.0027)	0.0024	(0.0027)
No Response					-0.34*	(0.15)	-0.34*	(0.15)	-0.40**	(0.15)	-0.32*	(0.16)
Yes					-0.20**	(0.073)	-0.20**	(0.073)	-0.064	(0.074)	-0.048	(0.074)
Ever Worked							0.041	(0.11)	0.016	(0.11)	0.019	(0.11)
Employment (Ref=Employed)												
Unemployed							-0.23	(0.16)	-0.36*	(0.15)	-0.34*	(0.15)
Retired							0.014	(0.13)	-0.013	(0.13)	-0.013	(0.13)
Birth Setting: Urban									0.051	(0.11)	0.035	(0.11)
Region (Ref=Greater Cairo)												
Alexandria & Suez Canal									0.14	(0.15)	0.17	(0.15)
Urban Lower									0.30*	(0.13)	0.36**	(0.13)
Urban Upper									-0.036	(0.13)	0.063	(0.13)
Rural Lower									0.31*	(0.14)	0.40**	(0.14)
Rural Upper									-0.63***	(0.14)	-0.47**	(0.15)
Household Wealth Index (Ref=Poorest)												
Poorer											0.061	(0.095)
Middle											0.30**	(0.099)
Richer											0.34**	(0.11)
Richest											0.46***	(0.13)
Household Size											-0.035	(0.019)
R-squared	0.000		0.024		0.080		0.081		0.096		0.098	
BIC	43231.1		43088.3		42630.3		42652.6		42566.9		42588.1	
F	2.50		26.4		50.7		42.5		38.3		32.6	
df_m	1		8		15		18		24		29	
df_r	8717		8710		8703		8700		8694		8689	

Notes: *p<0.05, ** p<0.01, *** p<0.001. Standard errors in parentheses

Table 5L.11 Betas and Standard Errors from Ordinary Least Squares Regression Models Predicting Women's Autonomy: Mobility (0 - 4, higher values = greater mobility) of Ever Married Women Ages 15 to 49 at Wave III, 2012 Egyptian Labor Market Panel Survey N=8,719

Key Variables	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6	
	b	(SE)	b	(SE)	b	(SE)	b	(SE)	b	(SE)	b	(SE)
Age (yrs)	0.016***	(0.0011)			0.023***	(0.0017)	0.021***	(0.0018)	0.020***	(0.0018)	0.021***	(0.0018)
Education (Ref=Primary)												
None			-0.087*	(0.037)	-0.086*	(0.037)	-0.086*	(0.036)	-0.075*	(0.036)	-0.089*	(0.037)
Preparatory			-0.13**	(0.047)	-0.12*	(0.047)	-0.11*	(0.047)	-0.095*	(0.046)	-0.089	(0.046)
Secondary			-0.17**	(0.061)	-0.14*	(0.061)	-0.15*	(0.061)	-0.16**	(0.060)	-0.13*	(0.061)
Technical Secondary			-0.013	(0.036)	-0.0064	(0.036)	-0.041	(0.036)	-0.055	(0.036)	-0.040	(0.036)
Intermediate or Higher			-0.097*	(0.040)	-0.10*	(0.041)	-0.18***	(0.042)	-0.19***	(0.041)	-0.15***	(0.043)
Mother's Education (Ref=Primary)												
None			-0.13	(0.073)	-0.14*	(0.073)	-0.16*	(0.073)	-0.15*	(0.072)	-0.11	(0.073)
Preparatory or Higher			-0.052*	(0.025)	-0.059*	(0.025)	-0.066**	(0.025)	-0.049	(0.025)	-0.030	(0.025)
Separated (Ref=Married)					0.24***	(0.044)	0.22***	(0.043)	0.23***	(0.043)	0.22***	(0.043)
Older than 18 at First Marriage					-0.076**	(0.025)	-0.071**	(0.025)	-0.085***	(0.025)	-0.085***	(0.025)
Dowry (Ref=None)												
No Response					-0.065*	(0.031)	-0.060	(0.031)	-0.023	(0.030)	-0.021	(0.030)
Some					-0.043	(0.023)	-0.034	(0.023)	0.034	(0.024)	0.032	(0.024)
Marriage Process Duration (Months)					0.0020*	(0.00081)	0.0019*	(0.00081)	0.00097	(0.00081)	0.0010	(0.00081)
Related to Husband (Ref=No)												
No Response					-0.21***	(0.045)	-0.20***	(0.044)	-0.22***	(0.044)	-0.24***	(0.047)
Yes					-0.11***	(0.022)	-0.10***	(0.022)	-0.078***	(0.022)	-0.080***	(0.022)
Ever Worked							0.13***	(0.032)	0.13***	(0.032)	0.13***	(0.032)
Employment (Ref=Employed)												
Unemployed							0.077	(0.047)	0.036	(0.046)	0.029	(0.046)
Retired							-0.11**	(0.038)	-0.10**	(0.038)	-0.11**	(0.038)
Birth Setting: Urban									0.0095	(0.032)	0.014	(0.032)
Region (Ref=Greater Cairo)												
Alexandria & Suez Canal									-0.33***	(0.044)	-0.34***	(0.044)
Urban Lower									0.055	(0.040)	0.034	(0.040)
Urban Upper									-0.17***	(0.039)	-0.20***	(0.039)
Rural Lower									0.047	(0.042)	0.019	(0.043)
Rural Upper									-0.18***	(0.043)	-0.22***	(0.045)
Household Wealth Index (Ref=Poorest)												
Poorer											-0.013	(0.028)
Middle											-0.032	(0.030)
Richer											-0.057	(0.032)
Richest											-0.13***	(0.038)
Household Size											0.0054	(0.0058)
R-squared	0.022		0.026		0.039		0.052		0.072		0.074	
BIC	21826.1		21851.2		21798.2		21707.8		21573.9		21603.5	
F	193.7		29.1		23.5		26.4		28.1		23.9	
df_m	1		8		15		18		24		29	
df_r	8717		8710		8703		8700		8694		8689	

Notes: *p<0.05, ** p<0.01, *** p<0.001. Standard errors in parentheses

Table 5L.12 Odds Ratios and Standard Errors from Logistic Regression Models Predicting Women's Autonomy: Financial Autonomy of Ever Married Women Ages 15 to 49 at Wave III, 2012 Egyptian Labor Market Panel Survey N=8,719

Key Variables	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6	
	OR	(SE)	OR	(SE)	OR	(SE)	OR	(SE)	OR	(SE)	OR	(SE)
Age (yrs)	1.04***	(0.0029)	1.04***	(0.0030)	1.04***	(0.0045)	1.04***	(0.0045)	1.03***	(0.0046)	1.03***	(0.0046)
Education (Ref=Primary)												
None			0.80*	(0.071)	0.83*	(0.074)	0.83*	(0.075)	0.95	(0.087)	0.99	(0.092)
Preparatory			0.74**	(0.085)	0.75*	(0.086)	0.77*	(0.089)	0.79*	(0.093)	0.79*	(0.093)
Secondary			0.86	(0.13)	0.85	(0.13)	0.85	(0.13)	0.88	(0.13)	0.85	(0.13)
Technical Secondary			1.04	(0.090)	1.03	(0.091)	1.02	(0.091)	1.04	(0.094)	1.02	(0.093)
Intermediate or Higher			1.23*	(0.12)	1.20	(0.12)	1.09	(0.11)	1.06	(0.11)	1.02	(0.11)
Mother's Education (Ref=Primary)												
None			1.56*	(0.29)	1.52*	(0.29)	1.40	(0.27)	1.18	(0.23)	1.18	(0.23)
Preparatory or Higher			1.38***	(0.086)	1.35***	(0.084)	1.33***	(0.084)	1.21**	(0.078)	1.19**	(0.078)
Separated (Ref=Married)					1.22	(0.14)	1.18	(0.13)	1.17	(0.13)	1.12	(0.13)
Older than 18 at First Marriage					0.98	(0.061)	0.98	(0.061)	0.92	(0.058)	0.89	(0.056)
Dowry (Ref=None)												
No Response					0.84*	(0.063)	0.85*	(0.064)	0.91	(0.070)	0.92	(0.070)
Some					0.79***	(0.045)	0.80***	(0.046)	0.91	(0.055)	0.92	(0.055)
Marriage Process Duration (Months) Related to Husband (Ref=No)					1.01***	(0.0020)	1.01***	(0.0020)	1.01**	(0.0021)	1.01**	(0.0021)
No Response					1.07	(0.12)	1.08	(0.12)	1.07	(0.12)	1.41**	(0.17)
Yes					0.74***	(0.040)	0.74***	(0.040)	0.82***	(0.045)	0.84***	(0.046)
Ever Worked							1.59***	(0.13)	1.47***	(0.12)	1.47***	(0.12)
Employment (Ref=Employed)												
Unemployed							0.91	(0.11)	0.83	(0.10)	0.84	(0.10)
Retired							1.00	(0.098)	0.87	(0.087)	0.86	(0.086)
Current Location: Urban												
Birth Setting: Urban									1.30**	(0.11)	1.28**	(0.11)
Region (Ref=Greater Cairo)												
Alexandria & Suez Canal									0.80	(0.095)	0.78*	(0.094)
Urban Lower									0.74**	(0.081)	0.75**	(0.082)
Urban Upper									0.38***	(0.039)	0.40***	(0.042)
Rural Lower									0.66***	(0.073)	0.68***	(0.077)
Rural Upper									0.48***	(0.055)	0.53***	(0.063)
Household Wealth Index (Ref=Poorest)												
Poorer											0.97	(0.069)
Middle											1.03	(0.077)
Richer											1.06	(0.086)
Richest											0.98	(0.095)
Household Size											0.90***	(0.013)
BIC	11761.3		11698.4		11683.6		11632.4		11517.3		11511.3	
df_r	1		8		15		18		24		29	

Notes: *p<0.05, ** p<0.01, *** p<0.001. Standard errors in parentheses

Table 5L.13 Ordinary Least Squares and Logistic Regression Models Predicting Women's Autonomy (with Spouse variables), Married Women Ages 15 to 49 at Wave III, 2012 Egyptian Labor Market Panel Survey

Key Variables	Individual Decision-Making N=7,620		Joint Decision-Making N=7,620		Mobility N=7,620		Financial Autonomy N=7,620	
	OLS						Logistic	
	b	(SE)	b	(SE)	b	(SE)	OR	(SE)
Age (yrs)	0.065***	(0.0075)	0.025**	(0.0093)	0.018***	(0.0027)	1.04***	(0.0074)
Education (Ref=Primary)								
None	-0.18	(0.11)	0.027	(0.13)	-0.10**	(0.038)	1.00	(0.10)
Preparatory	-0.067	(0.14)	-0.12	(0.17)	-0.043	(0.048)	0.86	(0.11)
Secondary	-0.024	(0.18)	0.25	(0.22)	-0.11	(0.063)	0.88	(0.15)
Technical Secondary	0.085	(0.11)	0.25	(0.13)	-0.019	(0.038)	1.12	(0.11)
Intermediate or Higher	-0.23	(0.13)	0.47**	(0.16)	-0.091	(0.047)	1.17	(0.14)
Mother's Education (Ref=Primary)								
None	-0.37	(0.21)	0.33	(0.26)	-0.10	(0.075)	1.15	(0.24)
Preparatory or Higher	0.047	(0.073)	-0.018	(0.091)	-0.025	(0.026)	1.24**	(0.087)
Older than 18 at First Marriage	-0.20**	(0.075)	-0.072	(0.093)	-0.074**	(0.027)	0.86*	(0.060)
Dowry (Ref=None)								
No Response	-0.11	(0.11)	0.092	(0.14)	0.0074	(0.039)	0.90	(0.093)
Some	-0.27***	(0.069)	0.36***	(0.085)	0.023	(0.024)	0.91	(0.059)
Marriage Process Duration (Months)	-0.0013	(0.0024)	0.0048	(0.0030)	0.00064	(0.00086)	1.01*	(0.0023)
Related to Husband (Ref=No)								
No Response	-0.79***	(0.16)	-0.19	(0.19)	-0.27***	(0.055)	1.36*	(0.20)
Yes	-0.031	(0.064)	-0.033	(0.079)	-0.089***	(0.023)	0.81***	(0.048)
Ever Worked	0.45***	(0.092)	0.072	(0.11)	0.12***	(0.033)	1.50***	(0.13)
Employment (Ref=Employed)								
Unemployed	0.31*	(0.13)	-0.22	(0.17)	0.0027	(0.048)	0.80	(0.10)
Retired	-0.046	(0.11)	-0.023	(0.14)	-0.13**	(0.039)	0.83	(0.089)
Birth Setting: Urban	0.22*	(0.093)	-0.015	(0.12)	0.010	(0.033)	1.34***	(0.12)
Region (Ref=Greater Cairo)								
Alexandria & Suez Canal	-0.31*	(0.12)	0.12	(0.15)	-0.34***	(0.044)	0.72*	(0.092)
Urban Lower	-0.62***	(0.12)	0.41**	(0.14)	0.028	(0.041)	0.69**	(0.081)
Urban Upper	-1.29***	(0.11)	0.0092	(0.14)	-0.23***	(0.040)	0.33***	(0.037)
Rural Lower	-0.70***	(0.12)	0.48**	(0.15)	-0.0099	(0.044)	0.61***	(0.073)
Rural Upper	-1.11***	(0.13)	-0.36*	(0.16)	-0.24***	(0.046)	0.45***	(0.056)
Household Wealth Index (Ref=Poorest)								
Poorer	-0.067	(0.084)	0.093	(0.10)	-0.030	(0.030)	0.93	(0.073)
Middle	-0.20*	(0.088)	0.38***	(0.11)	-0.022	(0.031)	1.01	(0.083)
Richer	-0.23*	(0.096)	0.44***	(0.12)	-0.071*	(0.034)	1.01	(0.091)
Richest	-0.18	(0.11)	0.56***	(0.14)	-0.13***	(0.040)	0.95	(0.10)
Household Size	0.013	(0.017)	-0.031	(0.021)	0.0041	(0.0062)	0.90***	(0.015)
Husband's Age (yrs)	0.0035	(0.0054)	0.000088	(0.0067)	0.0014	(0.0019)	0.99**	(0.0051)
Husband's Education (Ref=Primary)								
None	-0.080	(0.095)	0.028	(0.12)	-0.016	(0.034)	0.93	(0.083)
Preparatory	-0.030	(0.13)	0.25	(0.16)	0.033	(0.047)	1.18	(0.15)
Secondary	-0.40*	(0.19)	-0.066	(0.24)	-0.075	(0.068)	0.66*	(0.12)
Technical Secondary	-0.29**	(0.091)	0.21	(0.11)	-0.084**	(0.032)	0.80**	(0.068)
Intermediate or Higher	-0.41***	(0.11)	0.25	(0.14)	-0.14***	(0.039)	0.81*	(0.085)
Husband's Employment (Ref=Employed)								
Unemployed	-0.14	(0.19)	0.17	(0.24)	-0.083	(0.068)	0.53***	(0.097)
Out of Labor Force	0.20	(0.18)	-0.62**	(0.22)	-0.15*	(0.063)	0.94	(0.16)
Husband's Religion (Ref=Muslim)	-0.36*	(0.16)	0.45*	(0.20)	-0.022	(0.057)	1.01	(0.15)
R-squared	0.089		0.049		0.073			
BIC	34135.9		37372.4		18371.8		10117.9	
F	19.6		10.3		16.0			
df_m	38		38		37		37	
df_r	7582		7582		7582		7582	

Notes: *p<0.05, ** p<0.01, *** p<0.001. Standard errors in parentheses

Table 5L.14 Multilevel Ordinary Least Squares and Logistic Regression Models Predicting Women's Autonomy, Ever Married Women Ages 15 to 49 at Wave II, 2006 Egyptian Labor Market Panel Survey

Key Variables	Individual Decision-Making N=8,719		Joint Decision-Making N=8,719		Mobility N=8,719		Financial Autonomy N=8,719	
	OLS						Logistic	
	b	(SE)	b	(SE)	b	(SE)	OR	(SE)
Age (yrs)	0.082***	(0.0049)	0.020***	(0.0057)	0.021***	(0.0017)	1.03***	(0.0051)
Education (Ref=Primary)								
None	-0.078	(0.10)	-0.042	(0.12)	-0.071*	(0.036)	1.04	(0.11)
Preparatory	0.0094	(0.13)	-0.15	(0.15)	-0.054	(0.045)	0.88	(0.11)
Secondary	-0.16	(0.17)	0.15	(0.20)	-0.13*	(0.059)	0.85	(0.14)
Technical Secondary	0.096	(0.100)	0.24*	(0.12)	-0.039	(0.035)	1.09	(0.11)
Intermediate or Higher	-0.26*	(0.12)	0.51***	(0.14)	-0.14***	(0.041)	1.16	(0.14)
Mother's Education (Ref=Primary)								
None	-0.33	(0.21)	0.28	(0.24)	-0.11	(0.072)	1.08	(0.23)
Preparatory or Higher	0.012	(0.071)	-0.043	(0.083)	-0.036	(0.025)	1.17*	(0.084)
Separated (Ref=Married)	0.73***	(0.13)	-2.08***	(0.15)	0.25***	(0.042)	0.33***	(0.052)
Older than 18 at First Marriage	-0.17*	(0.069)	-0.076	(0.081)	-0.063**	(0.024)	0.92	(0.064)
Dowry (Ref=None)								
No Response	-0.19*	(0.090)	0.23*	(0.10)	-0.011	(0.032)	0.92	(0.082)
Some	-0.13	(0.069)	0.31***	(0.080)	0.028	(0.024)	0.98	(0.067)
Marriage Process Duration (Months)	0.00092	(0.0023)	0.0022	(0.0026)	0.0010	(0.00079)	1.00*	(0.0023)
Related to Husband (Ref=No)								
No Response	-0.84***	(0.13)	-0.29	(0.15)	-0.26***	(0.046)	1.33*	(0.18)
Yes	-0.025	(0.062)	-0.0098	(0.072)	-0.058**	(0.022)	0.85**	(0.051)
Ever Worked	0.21*	(0.090)	0.0092	(0.10)	0.072*	(0.031)	1.33**	(0.12)
Employment (Ref=Employed)								
Unemployed	0.18	(0.13)	-0.25	(0.15)	0.0030	(0.045)	0.76*	(0.099)
Retired	-0.17	(0.11)	0.0042	(0.12)	-0.11**	(0.037)	0.84	(0.091)
Birth Setting: Urban	0.24*	(0.092)	-0.012	(0.11)	0.020	(0.032)	1.39***	(0.13)
Region (Ref=Greater Cairo)								
Alexandria & Suez Canal	-0.31	(0.17)	0.19	(0.18)	-0.31***	(0.060)	0.85	(0.14)
Urban Lower	-0.55***	(0.16)	0.38*	(0.17)	0.055	(0.057)	0.76	(0.11)
Urban Upper	-1.30***	(0.16)	0.13	(0.16)	-0.20***	(0.056)	0.34***	(0.049)
Rural Lower	-0.65***	(0.15)	0.53**	(0.17)	0.064	(0.055)	0.66**	(0.095)
Rural Upper	-1.19***	(0.16)	-0.36*	(0.17)	-0.20***	(0.057)	0.44***	(0.065)
Household Wealth Index (Ref=Poorest)								
Poorer	-0.15	(0.079)	0.094	(0.092)	-0.020	(0.028)	0.91	(0.071)
Middle	-0.31***	(0.083)	0.33***	(0.097)	-0.044	(0.029)	0.98	(0.080)
Richer	-0.32***	(0.091)	0.42***	(0.11)	-0.069*	(0.032)	0.96	(0.087)
Richest	-0.29**	(0.11)	0.54***	(0.12)	-0.14***	(0.037)	0.93	(0.099)
Household Size	0.037*	(0.016)	-0.035	(0.019)	0.0092	(0.0057)	0.91***	(0.015)
BIC	32537.5		34444.4		13243.4		10853.5	
Variance at Level 1 (Individual Level)	2.224527	0.017478	2.61286	0.020474	0.715802	0.006345	0.607536	0.040385
Variance at Level 2 (PSU Level)	0.737174	0.038034	0.656613	0.043301	0.243209	0.013844		
ICC	0.09		0.08		0.11		0.14	

Notes: *p<0.05, ** p<0.01, *** p<0.001. Standard errors in parentheses

Table 5L.15 Multilevel Ordinary Least Squares and Logistic Regression Models Predicting Women's Autonomy (with Husband variables): Married Women Ages 15 to 49 at Wave III, 2012 Egyptian Labor Market Panel Survey

Key Variables	Decision-Making N=7,620		Joint Decision-Making N=7,620		Mobility N=7,620		Financial Autonomy N=7,620	
	OLS							
	b	(SE)	b	(SE)	b	(SE)	OR	(SE)
Age (yrs)	0.060***	(0.0072)	0.027**	(0.0091)	0.015***	(0.0026)	1.04***	(0.0079)
Education (Ref=Primary)								
None	-0.18	(0.10)	-0.029	(0.13)	-0.081*	(0.037)	0.97	(0.11)
Preparatory	0.061	(0.13)	-0.20	(0.16)	0.00079	(0.046)	0.93	(0.13)
Secondary	-0.019	(0.17)	0.17	(0.21)	-0.12	(0.061)	0.92	(0.16)
Technical Secondary	0.15	(0.10)	0.15	(0.13)	-0.014	(0.037)	1.15	(0.12)
Intermediate or Higher	-0.11	(0.13)	0.34*	(0.16)	-0.080	(0.045)	1.26	(0.17)
Mother's Education (Ref=Primary)								
None	-0.32	(0.20)	0.26	(0.26)	-0.11	(0.073)	1.09	(0.24)
Preparatory or Higher	0.014	(0.071)	-0.026	(0.090)	-0.035	(0.025)	1.21**	(0.091)
Older than 18 at First Marriage	-0.17*	(0.072)	-0.062	(0.091)	-0.048	(0.026)	0.88	(0.066)
Dowry (Ref=None)								
No Response	-0.0091	(0.11)	0.11	(0.14)	0.013	(0.041)	0.92	(0.11)
Some	-0.12	(0.070)	0.31***	(0.087)	0.023	(0.025)	1.01	(0.073)
Marriage Process Duration (Months) Related to Husband (Ref=No)	0.00023	(0.0023)	0.0026	(0.0029)	0.00059	(0.00083)	1.00	(0.0024)
No Response	-0.80***	(0.15)	-0.23	(0.19)	-0.28***	(0.055)	1.35	(0.22)
Yes	0.0066	(0.061)	-0.0070	(0.078)	-0.069**	(0.022)	0.85*	(0.054)
Ever Worked	0.23*	(0.090)	0.065	(0.11)	0.055	(0.032)	1.33**	(0.13)
Employment (Ref=Employed)								
Unemployed	0.20	(0.13)	-0.19	(0.17)	-0.029	(0.047)	0.78	(0.11)
Retired	-0.11	(0.11)	0.012	(0.13)	-0.13***	(0.038)	0.81	(0.093)
Birth Setting: Urban	0.22*	(0.093)	-0.0073	(0.12)	0.018	(0.033)	1.38***	(0.13)
Region (Ref=Greater Cairo)								
Alexandria & Suez Canal	-0.29	(0.17)	0.13	(0.19)	-0.32***	(0.061)	0.78	(0.13)
Urban Lower	-0.56***	(0.16)	0.40*	(0.18)	0.043	(0.057)	0.73*	(0.12)
Urban Upper	-1.34***	(0.16)	0.019	(0.18)	-0.24***	(0.057)	0.29***	(0.045)
Rural Lower	-0.64***	(0.16)	0.56**	(0.18)	0.026	(0.056)	0.60***	(0.092)
Rural Upper	-1.19***	(0.17)	-0.37	(0.19)	-0.25***	(0.058)	0.40***	(0.064)
Household Wealth Index (Ref=Poorest)								
Poorer	-0.14	(0.080)	0.11	(0.10)	-0.040	(0.029)	0.88	(0.074)
Middle	-0.28***	(0.085)	0.39***	(0.11)	-0.044	(0.031)	0.95	(0.084)
Richer	-0.29**	(0.093)	0.46***	(0.12)	-0.093**	(0.033)	0.94	(0.091)
Richest	-0.27*	(0.11)	0.59***	(0.14)	-0.16***	(0.039)	0.89	(0.10)
Household Size	0.018	(0.017)	-0.027	(0.021)	0.0062	(0.0060)	0.90***	(0.016)
Husband's Age (yrs)	0.012*	(0.0052)	-0.0040	(0.0066)	0.0039*	(0.0019)	0.99*	(0.0054)
Husband's Education (Ref=Primary)								
None	0.034	(0.092)	-0.040	(0.12)	-0.014	(0.033)	0.97	(0.093)
Preparatory	-0.027	(0.13)	0.25	(0.16)	0.040	(0.045)	1.20	(0.16)
Secondary	-0.40*	(0.18)	-0.027	(0.23)	-0.069	(0.066)	0.61**	(0.12)
Technical Secondary	-0.24**	(0.087)	0.20	(0.11)	-0.072*	(0.031)	0.81*	(0.074)
Intermediate or Higher	-0.38***	(0.11)	0.30*	(0.13)	-0.12**	(0.038)	0.82	(0.091)
Husband's Employment (Ref=Employed)								
Unemployed	-0.14	(0.18)	0.12	(0.23)	-0.11	(0.066)	0.49***	(0.097)
Out of Labor Force	0.068	(0.17)	-0.56**	(0.21)	-0.16**	(0.060)	0.90	(0.16)
Husband's Religion (Ref=Muslim)	-0.27	(0.17)	0.34	(0.21)	-0.026	(0.059)	1.08	(0.19)
BIC	33695.1		37202.5		13898.2		9899.1	
Variance at Level 1 (Individual Level)	2.07673	0.017567	2.646682	0.022315	0.6960318	0.0066029	0.6582689	0.0442072
Variance at Level 2 (PSU Level)	0.780246	0.038804	0.736670	0.047438	0.2489608	0.0143332		
ICC	0.09		0.08		0.11		0.14	

Notes: *p<0.05, ** p<0.01, *** p<0.001. Standard errors in parentheses

Table 5L.16 Sample Characteristics and Lost to Follow Up Characteristics (Means (SE) or %) of Married Women Ages 15 to 49 with Spouses at Wave II, 2006 and 2012 Egyptian Labor Market Panel Survey

Key Variables in 2006	Wave II (2006) N=5,735		Lost to F/U N=1,160		Wave III (2012) N=4,575	
	N	% or Mean (SD)	N	% or Mean (SD)	N	% or Mean (SD)
Current Age in years						
15 - 19 yrs	253	4.41	44	3.79	209	4.57
20 - 24 yrs	1,119	19.51	250	21.55	869	18.99
25 - 29 yrs	1,211	21.12	301	25.95	910	19.89
30 - 34 yrs	932	16.25	193	16.64	739	16.15
35 - 39 yrs	825	14.39	146	12.59	679	14.84
40 - 44 yrs	803	14	124	10.69	679	14.84
45 - 49 yrs	592	10.32	102	8.79	490	10.71
Mean (SD)	5,735	32.0 (8.63)	1,160	30.9 (8.26)	4,575	32.2 (8.70)
Age at First Marriage (if ever married)						
Less than 18 years	1,260	21.97	168	14	1,092	23.87
18 years or older	4,474	78	992	86	3,482	76.13
Mean (SD)	5,735	20.7 (4.13)	1,160	22.2 (4.40)	4,575	20.4 (3.99)
Value of Dowry						
No Response	1,518	26.47	290	25	1,228	26.84
No Amount	2,315	40.37	548	47	1,767	38.62
Some Amount	1,902	33.16	322	27.76	1,580	34.54
Mean (SD)	5,735	14.4 (13.5)	1,160	15.8 (15.0)	4,575	14.0 (13.0)
Marriage Process Duration (Months)						
Related to Husband						
No	4,008	69.87	899	77.41	3,109	67.96
Yes	1,727	30.11	261	22.5	1,466	32.04
Mother's Education						
None	78	1.36	45	3.88	33	0.72
Primary	4,491	78.31	778	67.07	3,713	81.16
Preparatory or Higher	1,166	20.33	337	29.05	829	18.12
Education						
None	2,136	37.24	297	25.6	1,839	40.2
Primary	435	7.59	82	7.07	353	7.72
Preparatory	307	5.35	59	5.09	248	5.42
Secondary	1,853	32.31	379	32.67	1,474	32.22
Intermediate or Higher	1,004	17.51	343	29.57	661	14.45
Mean (SD)	5,735	7.78 (5.72)	1,160	9.57 (5.51)	4,575	7.32 (5.69)
Years of Education						
Ever Worked						
No	3,978	69.36	795	69	3,183	69.57
Yes	1,757	30.64	365	31	1,392	30.43
Currently Employed						
Employed	1,364	23.78	250	22	1,114	24.35
Unemployed	265	4.62	53	4.57	212	4.63
Out of Labor Force	4,106	71.6	857	74	3,249	71.02
HOUSEHOLD VARIABLES						
Current Setting						
Rural	2,729	47.59	280	24	2,449	53.53
Urban	3,006	52.41	880	76	2,126	46.47
Setting of Birth						
Rural	2,852	49.73	315	27.16	2,537	55.45
Urban	2,883	50.27	845	72.84	2,038	44.55
Mean (SD)	5,735	5.25 (2.62)	1,160	4.40 (2.14)	4,575	5.48 (2.68)
Household Size						
Region						
Greater Cairo	831	14.49	368	31.72	463	10.12
Alexandria & Suez Canal	599	10.44	214	18.45	385	8.42
Urban Lower	736	12.83	169	14.57	567	12.39
Urban Upper	840	14.65	129	11.12	711	15.54
Rural Lower	1,513	26.38	150	12.93	1,363	29.79
Rural Upper	1,216	21.2	130	11.21	1,086	23.74
Household Wealth Index						
Poorest	939	16.37	89	8	850	18.58
Poorer	1,184	20.65	174	15	1,010	22.08
Middle	1,248	21.76	232	20	1,016	22.21
Richer	1,205	21.01	324	27.93	881	19.26
Richest	1,159	20.21	341	29	818	17.88
HUSBAND VARIABLES						
Husband's Age in years						
15 - 19 yrs	11	0.19	1	0.09	10	0.22
20 - 24 yrs	239	4.17	54	4.66	185	4.04
25 - 29 yrs	878	15.31	208	17.93	670	14.64

30 - 34 yrs	1,114	19.42	279	24.05	835	18.25
35 - 39 yrs	921	16.06	190	16.38	731	15.98
40 - 44 yrs	878	15.31	154	13.28	724	15.83
45 - 49 yrs	778	13.57	123	10.6	655	14.32
50 or older	916	15.97	151	13.02	765	16.72
Mean (SD)	5,735	38.7 (9.72)	1,160	37.3 (9.56)	4,575	39.1 (9.74)
Difference in Age	5,735	6.88 (4.73)	1,160	6.49 (4.94)	4,575	6.97 (4.67)
Husband's Education						
None	1,721	30.01	233	20.09	1,488	32.52
Primary	655	11.42	115	9.91	540	11.8
Preparatory	311	5.42	73	6.29	238	5.2
Secondary	1,738	30.31	347	29.91	1,391	30.4
Intermediate or Higher	1,310	22.84	392	33.79	918	20.07
Years of Education	5,735	9.06 (5.49)	1,160	10.5 (5.28)	4,575	8.68 (5.47)
Difference in Years of Education	5,735	3.03 (3.35)	1,160	2.72 (3.11)	4,575	3.10 (3.41)
Husband Ever Worked						
No	22	0.38	3	0.26	19	0.42
Yes	5,713	99.62	1,157	99.74	4,556	99.58
Husband Employed						
Employed	5,496	95.83	1,106	95.34	4,390	95.96
Unemployed	60	1.05	21	1.81	39	0.85
Out of Labor Force	179	3.12	33	2.84	146	3.19
Husband's Migration						
No Response	1,100	19.18	446	38.45	654	14.3
No	4,291	74.82	671	57.84	3,620	79.13
Yes	344	6	43	3.71	301	6.58

Table 5L.17 Distribution of Autonomy and Births in 2006 for Sample and those Lost to Follow Up (Means (SE)), Married Women Ages 15 to 49 with Spouses at Wave II, 2006 and 2012 Egyptian Labor Market Panel Survey

Key Variables in 2006	Wave II (2006) N=5,735		Lost to F/U N=1,160		Wave III (2012) N=4,575	
	N	Mean (SD)	N	Mean (SD)	N	Mean (SD)
Individual Household Decision-Making	5,735	2.46 (2.23)	1,160	2.39 (2.13)	4,575	2.49 (2.25)
Joint Household Decision-Making	5,735	3.67 (2.64)	1,160	4.10 (2.56)	4,575	3.56 (2.64)
Mobility	5,735	2.06 (0.69)	1,160	2.08 (0.71)	4,575	2.05 (0.68)
Financial Autonomy	5,735	0.22 (0.41)	1,160	0.29 (0.45)	4,575	0.20 (0.40)
Gender Attitudes	5,735	3.74 (0.56)	1,160	1.54 (1.85)	4,575	3.73 (0.56)
Domestic Violence Attitudes	5,735	1.98 (2.04)	1,160	30.9 (8.26)	4,575	2.09 (2.07)
Number of Births	5,735	2.77 (2.27)	1,160	2.10 (1.97)	4,575	2.94 (2.31)

Table 5L.18 Sample Characteristics and Lost to Follow Up Characteristics (Means (SE) or %) of Ever Married Women by Wave III, Ages 15 to 49 in Wave II, 2006 and 2012 Egyptian Labor Market Panel Survey

Key Variables	Ever Married Women by 2012 N=6,594	
	N	% or Mean (SD)
Current Age in years		
15 - 19 yrs	1,019	15.45
20 - 24 yrs	1,378	20.9
25 - 29 yrs	1,119	16.97
30 - 34 yrs	842	12.77
35 - 39 yrs	782	11.86
40 - 44 yrs	821	12.45
45 - 49 yrs	633	9.6
Mean (SD)	6,594	30.0 (9.63)
Marital Status in 2012		
Married	6,042	91.63
Separated/Divorced/Widow	552	8.37
Married btw 2006 and 2012	6,594	0.21 (0.41)
Age at First Marriage in 2012		
Less than 18 years	1,281	19.51
18 years or older	5,286	80.49
Mean (SD)	6,594	21.0 (4.35)
Value of Dowry in 2012		
No Response	3,073	46.6
No Amount	2,427	36.81
Some Amount	1,094	16.59
Marriage Process Duration (Months) in 2012		
	6,594	8.30 (12.0)
Related to Husband in 2012		
No Response	2,496	37.85
No	2,921	44.3
Yes	1,177	17.85
Mother's Education		
None	77	1.17
Primary	5,182	78.59
Preparatory or Higher	1,335	20.25
Education		
None	2,383	36.14
Primary	502	7.61
Preparatory	559	8.48
Secondary	2,277	34.53
Intermediate or Higher	873	13.24
Years of Education	6,594	7.63 (5.51)
Ever Worked		
No	4,697	71.23
Yes	1,897	28.77
Currently Employed		
Employed	1,553	23.55
Unemployed	413	6.26
Out of Labor Force	4,628	70.19
HOUSEHOLD VARIABLES		
Current Setting		
Rural	3,574	54.2
Urban	3,020	45.8

Setting of Birth		
Rural	3,692	55.99
Urban	2,902	44.01
Household Size	6,594	5.63 (2.67)
Region		
Greater Cairo	646	9.8
Alexandria & Suez Canal	546	8.28
Urban Lower	825	12.51
Urban Upper	1,003	15.21
Rural Lower	1,981	30.04
Rural Upper	1,593	24.16
Household Wealth Index		
Poorest	1,302	19.75
Poorer	1,450	21.99
Middle	1,453	22.04
Richer	1,236	18.74
Richest	1,153	17.49

Table 5L.19 Distribution of Autonomy in 2012 (Means (SE)), Ever Married Women by Wave III, Ages 15 to 49 in Wave II, 2006 and 2012 Egyptian Labor Market Panel Survey

Key Variables in 2006	Ever Married Women by 2012 N=6,594	
	N	% or Mean (SD)
Individual Household Decision-Making	6,594	2.38 (2.54)
Joint Household Decision-Making	6,594	2.88 (2.67)
Mobility	6,594	1.94 (0.77)
Financial Autonomy	6,594	0.18 (0.39)
Gender Attitudes	6,594	3.78 (0.55)

Table 5L.20 Summary Statistics: Primary Study Scales and Outcomes of Autonomy for Women at Wave III, 2012 Egyptian Labor Market Panel Survey

Key Scales	Married Women 2006				Ever Married Women 2012			
	N	Range	Mode	% or Mean (SD)	N	Range	Mode	% or Mean (SD)
AUTONOMY in 2012								
Household Decision-Making								
Individual Participation in Decisions	4,575	0 - 10	0.00	2.54 (2.76)	6,594	0 - 10	0.00	2.54 (2.79)
Joint Participation in Decisions	4,575	0 - 10	0.00	3.07 (3.04)	6,594	0 - 10	0.00	2.97 (2.99)
Mobility	4,575	0 - 4	2.00	2.56 (0.81)	6,594	0 - 4	2.00	2.51 (0.84)
Financial Autonomy	4,575	0 - 1	-	0.60 (0.49)	6,594	0 - 1	-	0.60 (0.49)

Table 5L.21 Means (SD) of Outcomes of Autonomy for Women at Wave II and III, 2006 and 2012 Egyptian Labor Market Panel Survey

Key Outcomes	Married Women 2006		Ever Married Women 2012	
	N=4,575		N=6,594	
	2006	2012	2006	2012
AUTONOMY				
Household Decision-Making				
Individual Participation in Decisions	2.46 (2.23)	2.54 (2.76)	2.38 (2.54)	2.54 (2.79)
Joint Participation in Decisions	3.67 (2.64)	3.07 (3.04)	2.88 (2.67)	2.97 (2.99)
Mobility	2.06 (0.69)	2.56 (0.81)	1.94 (0.77)	2.51 (0.84)
Financial Autonomy	0.22 (0.41)	0.60 (0.49)	0.18 (0.39)	0.60 (0.49)

Table 5L.22 Ordinary Least Squares and Logistic Regression Models Predicting Women's Autonomy in 2012, Married Women Ages 15 to 49 with Spouses at Wave II, 2006 - 2012 Egyptian Labor Market Panel Survey

Key Variables	Individual Decision-Making 2012 N=4,575		Joint Decision-Making 2012 N=4,575		Mobility 2012 N=4,575		Financial Autonomy 2012 N=4,575	
	OLS						Logistic	
	b	(SE)	b	(SE)	b	(SE)	OR	(SE)
Respondent Household Decision Making 2006	0.17***	(0.022)	0.031	(0.024)	0.033***	(0.0074)	1.07***	(0.022)
Joint Household Decision Making 2006	0.12***	(0.016)	0.023	(0.018)	0.010	(0.0054)	1.06***	(0.016)
Mobility 2006	0.52***	(0.066)	-0.0066	(0.073)	0.14***	(0.022)	1.40***	(0.086)
Financial Autonomy 2006	0.17	(0.10)	-0.20	(0.11)	-0.016	(0.034)	1.00	(0.094)
Attitudes toward Gender Norms 2006	-0.16*	(0.072)	0.11	(0.080)	-0.0058	(0.024)	0.98	(0.064)
Attitudes towards Domestic Violence 2006	-0.015	(0.020)	0.043*	(0.022)	0.013	(0.0065)	1.02	(0.018)
Births in 2006	0.11***	(0.025)	0.070*	(0.028)	0.034***	(0.0094)	1.04	(0.027)
Age (yrs)	-0.11***	(0.0100)	-0.11***	(0.011)	-0.015***	(0.0037)	1.00	(0.010)
Education (Ref=Primary)								
None	-0.15	(0.16)	-0.29	(0.17)	-0.093	(0.051)	0.98	(0.14)
Preparatory	-0.025	(0.21)	-0.15	(0.24)	-0.062	(0.070)	1.34	(0.26)
Secondary	-0.37	(0.41)	-0.042	(0.46)	-0.14	(0.14)	1.27	(0.49)
Technical Secondary	0.36*	(0.16)	-0.065	(0.18)	0.0054	(0.053)	1.25	(0.18)
Intermediate or Higher	0.35	(0.20)	0.59**	(0.23)	0.030	(0.067)	1.25	(0.23)
Mother's Education (Ref=Primary)								
None	-0.70	(0.46)	0.34	(0.52)	-0.099	(0.15)	1.26	(0.53)
Preparatory or Higher	-0.027	(0.11)	-0.10	(0.12)	-0.024	(0.036)	0.95	(0.095)
Older than 18 at First Marriage	0.22*	(0.10)	0.28*	(0.12)	0.11**	(0.035)	1.04	(0.099)
Dowry (Ref=None)								
No Response	-0.063	(0.10)	0.023	(0.11)	0.028	(0.034)	1.04	(0.097)
Some	-0.17	(0.094)	0.17	(0.10)	-0.0032	(0.031)	1.07	(0.091)
Marriage Process Duration (Months) Related to Husband (Ref=No)	-0.0011	(0.0030)	0.0086*	(0.0034)	0.00035	(0.00099)	1.00	(0.0028)
Ever Worked	0.00064	(0.085)	-0.090	(0.094)	-0.051	(0.028)	0.88	(0.067)
Employment (Ref=Employed)	0.27	(0.16)	0.20	(0.18)	0.26***	(0.053)	1.77***	(0.27)
Unemployed	-0.11	(0.25)	0.49	(0.27)	0.18*	(0.078)	0.96	(0.21)
Retired	0.22	(0.18)	0.081	(0.20)	0.19***	(0.058)	1.10	(0.18)
Birth Setting: Urban	-0.031	(0.12)	0.23	(0.14)	-0.0063	(0.041)	1.03	(0.12)
Region (Ref=Greater Cairo)								
Alexandria & Suez Canal	-0.40*	(0.18)	0.21	(0.20)	-0.33***	(0.064)	0.73	(0.14)
Urban Lower	-0.80***	(0.17)	0.58**	(0.19)	-0.099	(0.059)	0.72	(0.13)
Urban Upper	-1.29***	(0.17)	0.44*	(0.19)	-0.20***	(0.057)	0.33***	(0.054)
Rural Lower	-0.91***	(0.18)	0.73***	(0.20)	-0.050	(0.060)	0.57**	(0.098)
Rural Upper	-1.22***	(0.19)	-0.061	(0.21)	-0.24***	(0.064)	0.40***	(0.073)
Household Wealth Index (Ref=Poorest)								
Poorer	-0.12	(0.12)	-0.12	(0.14)	-0.11**	(0.041)	0.92	(0.10)
Middle	-0.17	(0.13)	-0.14	(0.15)	-0.064	(0.044)	0.95	(0.11)
Richer	-0.25	(0.15)	0.054	(0.16)	-0.12*	(0.049)	0.75*	(0.10)
Richest	-0.33*	(0.17)	-0.22	(0.18)	-0.094	(0.056)	0.78	(0.12)
Household Size	-0.0035	(0.016)	0.013	(0.018)	-0.0017	(0.0053)	0.94***	(0.014)
Husband's Age (yrs)	0.012	(0.0082)	-0.0046	(0.0091)	0.0027	(0.0027)	1.00	(0.0074)
Husband's Education (Ref=Primary)								
None	0.12	(0.13)	-0.28	(0.15)	-0.044	(0.044)	0.99	(0.12)
Preparatory	0.100	(0.20)	-0.054	(0.22)	-0.10	(0.067)	0.82	(0.15)
Secondary	0.085	(0.45)	0.27	(0.50)	-0.063	(0.16)	2.03	(1.03)
Technical Secondary	-0.031	(0.14)	-0.18	(0.16)	-0.093*	(0.045)	0.86	(0.11)
Intermediate or Higher	-0.36*	(0.17)	0.077	(0.19)	-0.19***	(0.055)	0.91	(0.14)
Husband's Employment (Ref=Employed)								
Unemployed	0.068	(0.41)	-0.065	(0.46)	-0.059	(0.14)	1.36	(0.52)
Out of Labor Force	-0.054	(0.22)	-0.63**	(0.24)	0.013	(0.086)	1.02	(0.24)
Husband's Migration (Ref=No)								
No Response	0.13	(0.12)	0.064	(0.14)	0.036	(0.043)	1.19	(0.15)
Yes	0.28	(0.16)	0.48**	(0.18)	0.042	(0.054)	1.09	(0.16)
R-squared	0.147		0.137		0.079			
BIC	21909.7		22880.4		9346.6		5182.5	

Notes: *p<0.05, ** p<0.01, *** p<0.001. Standard errors in parentheses

Table 5L.23 Ordinary Least Squares and Logistic Regression Models Predicting Women's Autonomy in 2012, Ever Married Women Ages 15 to 49 at Wave III, 2006 - 2012 Egyptian Labor Market Panel Survey

Key Variables	Individual Decision-Making 2012 N=6,594		Joint Decision-Making 2012 N=6,594		Mobility 2012 N=6,594		Financial Autonomy 2012 N=6,594	
	OLS						Logistic	
	b	(SE)	b	(SE)	b	(SE)	OR	(SE)
Respondent Household Decision Making 2006	0.20***	(0.018)	0.016	(0.019)	0.034***	(0.0061)	1.06***	(0.018)
Joint Household Decision Making 2006	0.12***	(0.013)	0.046**	(0.014)	0.0081	(0.0044)	1.01	(0.012)
Mobility 2006	0.53***	(0.053)	0.085	(0.055)	0.14***	(0.018)	1.31***	(0.063)
Financial Autonomy 2006	0.14	(0.088)	-0.18	(0.092)	-0.018	(0.030)	0.98	(0.080)
Attitudes toward Gender Norms 2006	-0.20***	(0.061)	0.049	(0.064)	-0.041*	(0.020)	0.99	(0.053)
Age (yrs)	-0.097***	(0.0071)	-0.082***	(0.0075)	-0.0001	(0.0026)	1.00	(0.0070)
Education (Ref=Primary)								
None	-0.15	(0.13)	-0.24	(0.14)	-0.071	(0.044)	0.88	(0.10)
Preparatory	-0.38*	(0.16)	-0.30	(0.17)	-0.13*	(0.053)	1.22	(0.17)
Secondary	-0.16	(0.22)	0.33	(0.23)	0.0065	(0.069)	1.52*	(0.28)
Technical Secondary	0.24	(0.13)	0.094	(0.14)	0.010	(0.044)	1.07	(0.13)
Intermediate or Higher	0.16	(0.16)	0.80***	(0.17)	-0.023	(0.053)	1.03	(0.15)
Mother's Education (Ref=Primary)								
None	-0.65*	(0.31)	0.53	(0.33)	-0.099	(0.10)	1.02	(0.28)
Preparatory or Higher	-0.039	(0.091)	-0.047	(0.095)	-0.037	(0.030)	1.02	(0.082)
Separated (Ref=Married) 2012	1.55***	(0.12)	-2.28***	(0.13)	0.35***	(0.048)	1.72***	(0.24)
Older than 18 at First Marriage 2012	-0.11	(0.088)	-0.066	(0.093)	-0.026	(0.030)	1.00	(0.079)
Dowry (Ref=None) 2012								
No Response	-0.31*	(0.12)	0.24	(0.13)	0.019	(0.038)	1.00	(0.10)
Some	-0.16	(0.098)	0.28**	(0.10)	0.055	(0.030)	0.90	(0.071)
Marriage Process Duration (Months) 2012	0.000037	(0.0033)	0.0039	(0.0035)	0.00076	(0.0010)	1.01	(0.0027)
Related to Husband (Ref=No) 2012								
No Response	0.38*	(0.17)	0.062	(0.18)	-0.084	(0.053)	1.16	(0.16)
Yes	-0.057	(0.092)	-0.087	(0.097)	-0.062*	(0.029)	0.79**	(0.059)
Ever Worked	0.45**	(0.15)	0.14	(0.15)	0.25***	(0.049)	1.76***	(0.24)
Employment (Ref=Employed)								
Unemployed	0.27	(0.20)	0.28	(0.21)	0.19**	(0.065)	1.27	(0.23)
Retired	0.39*	(0.16)	0.11	(0.17)	0.20***	(0.053)	1.15	(0.17)
Birth Setting: Urban	-0.11	(0.11)	0.26*	(0.12)	-0.0071	(0.037)	1.04	(0.10)
Region (Ref=Greater Cairo)								
Alexandria & Suez Canal	-0.17	(0.15)	0.20	(0.16)	-0.26***	(0.053)	0.90	(0.14)
Urban Lower	-0.58***	(0.14)	0.45**	(0.15)	0.0065	(0.048)	0.72*	(0.099)
Urban Upper	-0.82***	(0.14)	0.31*	(0.14)	-0.14**	(0.046)	0.39***	(0.050)
Rural Lower	-0.70***	(0.15)	0.70***	(0.16)	0.027	(0.051)	0.61***	(0.087)
Rural Upper	-0.83***	(0.16)	-0.070	(0.17)	-0.17**	(0.054)	0.45***	(0.067)
Household Wealth Index (Ref=Poorest)								
Poorer	-0.12	(0.10)	-0.019	(0.11)	-0.076*	(0.034)	1.01	(0.089)
Middle	-0.11	(0.11)	-0.013	(0.11)	-0.021	(0.036)	1.05	(0.099)
Richer	-0.042	(0.12)	0.079	(0.13)	-0.091*	(0.040)	0.91	(0.095)
Richest	-0.18	(0.13)	-0.12	(0.14)	-0.066	(0.045)	1.03	(0.12)
Household Size	0.00039	(0.013)	-0.015	(0.014)	-0.0033	(0.0043)	0.97**	(0.011)
R-squared	0.138		0.167		0.087			
BIC	31446.2		32119.2		13741.9		7402.9	

Notes: *p<0.05, ** p<0.01, *** p<0.001. Standard errors in parentheses

Table 5L.24 Multilevel OLS and Logistic Regression Models Predicting Women's Autonomy in 2012, Married Women Ages 15 to 49 with Spouses at Wave II, 2006 - 2012 Egyptian Labor Market Panel Survey

Key Variables	Individual Decision-Making 2012 N=4,575		Joint Decision-Making 2012 N=4,575		Mobility 2012 N=4,575		Financial Autonomy 2012 N=4,575	
	OLS				Logistic			
	b	(SE)	b	(SE)	b	(SE)	OR	(SE)
Respondent Household Decision Making 2006	0.15***	(0.022)	0.034	(0.024)	0.029***	(0.0074)	1.06**	(0.023)
Joint Household Decision Making 2006	0.12***	(0.016)	0.021	(0.018)	0.010	(0.0054)	1.06***	(0.017)
Mobility 2006	0.47***	(0.066)	0.041	(0.073)	0.10***	(0.022)	1.32***	(0.087)
Financial Autonomy 2006	0.15	(0.10)	-0.17	(0.11)	-0.0056	(0.034)	0.97	(0.097)
Attitudes toward Gender Norms 2006	-0.11	(0.072)	0.050	(0.081)	-0.00028	(0.024)	1.02	(0.072)
Attitudes towards Domestic Violence 2006	-0.012	(0.020)	0.033	(0.022)	0.012	(0.0066)	1.01	(0.020)
Births in 2006	0.11***	(0.025)	0.067*	(0.027)	0.035***	(0.0093)	1.04	(0.029)
Age (yrs)	-0.11***	(0.0099)	-0.12***	(0.011)	-0.015***	(0.0036)	1.00	(0.011)
Education (Ref=Primary)								
None	-0.13	(0.15)	-0.32	(0.17)	-0.077	(0.050)	0.98	(0.14)
Preparatory	-0.0012	(0.21)	-0.23	(0.23)	-0.051	(0.068)	1.40	(0.28)
Secondary	-0.43	(0.41)	-0.18	(0.45)	-0.15	(0.14)	1.23	(0.50)
Technical Secondary	0.36*	(0.16)	-0.15	(0.18)	0.0075	(0.052)	1.26	(0.19)
Intermediate or Higher	0.35	(0.20)	0.50*	(0.22)	0.015	(0.065)	1.22	(0.24)
Mother's Education (Ref=Primary)								
None	-0.74	(0.46)	0.29	(0.51)	-0.087	(0.14)	1.21	(0.54)
Preparatory or Higher	-0.015	(0.11)	-0.18	(0.12)	-0.032	(0.036)	0.93	(0.098)
Older than 18 at First Marriage	0.21*	(0.10)	0.27*	(0.11)	0.11**	(0.035)	1.05	(0.11)
Dowry (Ref=None)								
No Response	-0.081	(0.11)	0.0079	(0.13)	0.047	(0.039)	1.04	(0.12)
Some	-0.18	(0.098)	0.098	(0.11)	-0.0018	(0.033)	1.06	(0.10)
Marriage Process Duration (Months) Related to Husband (Ref=No)	-0.00061	(0.003)	0.0078*	(0.003)	0.00024	(0.0010)	1.00	(0.0029)
Ever Worked	0.011	(0.084)	-0.088	(0.094)	-0.039	(0.028)	0.90	(0.073)
Employment (Ref=Employed)	0.23	(0.16)	0.24	(0.18)	0.23***	(0.052)	1.62**	(0.26)
Unemployed	-0.11	(0.24)	0.52	(0.27)	0.14	(0.077)	0.83	(0.19)
Retired	0.19	(0.17)	0.086	(0.19)	0.16**	(0.057)	0.99	(0.18)
Birth Setting: Urban	-0.0030	(0.12)	0.18	(0.14)	0.011	(0.041)	1.07	(0.13)
Region (Ref=Greater Cairo)								
Alexandria & Suez Canal	-0.40	(0.22)	0.19	(0.25)	-0.32***	(0.078)	0.67	(0.16)
Urban Lower	-0.74***	(0.21)	0.53*	(0.24)	-0.079	(0.074)	0.76	(0.17)
Urban Upper	-1.24***	(0.20)	0.39	(0.23)	-0.19**	(0.072)	0.31***	(0.065)
Rural Lower	-0.84***	(0.20)	0.72**	(0.23)	-0.039	(0.071)	0.57**	(0.12)
Rural Upper	-1.21***	(0.22)	-0.12	(0.25)	-0.23**	(0.076)	0.39***	(0.088)
Household Wealth Index (Ref=Poorest)								
Poorer	-0.12	(0.12)	-0.10	(0.14)	-0.11**	(0.041)	0.92	(0.11)
Middle	-0.14	(0.13)	-0.11	(0.15)	-0.049	(0.044)	0.98	(0.12)
Richer	-0.22	(0.15)	0.054	(0.16)	-0.11*	(0.049)	0.74*	(0.11)
Richest	-0.31	(0.17)	-0.20	(0.19)	-0.088	(0.056)	0.80	(0.13)
Household Size	-0.00050	(0.016)	0.021	(0.018)	0.0012	(0.0053)	0.94***	(0.015)
Husband's Age (yrs)	0.014	(0.0081)	-0.0064	(0.0090)	0.0036	(0.0027)	1.00	(0.0079)
Husband's Education (Ref=Primary)								
None	0.17	(0.13)	-0.29*	(0.15)	-0.047	(0.043)	1.00	(0.13)
Preparatory	0.085	(0.20)	0.0060	(0.22)	-0.093	(0.066)	0.80	(0.16)
Secondary	0.11	(0.45)	0.21	(0.50)	-0.062	(0.16)	2.03	(1.08)
Technical Secondary	-0.024	(0.14)	-0.14	(0.15)	-0.094*	(0.045)	0.84	(0.11)
Intermediate or Higher	-0.35*	(0.16)	0.14	(0.18)	-0.18***	(0.054)	0.89	(0.14)
Husband's Employment (Ref=Employed)								
Unemployed	0.012	(0.41)	-0.040	(0.45)	-0.090	(0.13)	1.38	(0.55)
Out of Labor Force	-0.079	(0.22)	-0.61*	(0.24)	-0.0024	(0.084)	1.02	(0.26)
Husband's Migration (Ref=No)								
No Response	0.12	(0.13)	0.099	(0.14)	0.050	(0.044)	1.25	(0.17)
Yes	0.29	(0.16)	0.47**	(0.18)	0.046	(0.054)	1.05	(0.17)
BIC	21880.4		22837.8		9289.0		5133.5	
Variance at Level 1 (Individual Level)	2.49		2.72		0.769			
Variance at Level 2 (PSU Level)	0.535		0.584		0.204		0.738	
ICC	0.034		0.044		0.066		0.139	

Notes: *p<0.05, ** p<0.01, *** p<0.001. Standard errors in parentheses

Table 5L.25 Multilevel OLS and Logistic Regression Models Predicting Women's Autonomy in 2012, Ever Married Women Ages 15 to 49 at Wave II, 2006 Egyptian Labor Market Panel Survey

Key Variables	Individual Decision-Making 2012 N=6,594		Joint Decision-Making 2012 N=6,594		Mobility 2012 N=6,594		Financial Autonomy 2012 N=6,594	
	OLS							
	b	(SE)	b	(SE)	b	(SE)	OR	(SE)
Respondent Household Decision Making 2006	0.19***	(0.018)	0.014	(0.019)	0.032***	(0.0060)	1.06**	(0.018)
Joint Household Decision Making 2006	0.12***	(0.013)	0.044**	(0.014)	0.0091*	(0.0044)	1.01	(0.012)
Mobility 2006	0.49***	(0.053)	0.11*	(0.056)	0.11***	(0.018)	1.24***	(0.063)
Financial Autonomy 2006	0.14	(0.089)	-0.14	(0.093)	0.00064	(0.030)	0.98	(0.084)
Attitudes toward Gender Norms 2006	-0.17**	(0.062)	-0.00030	(0.065)	-0.039	(0.020)	1.02	(0.058)
Age (yrs)	-0.095***	(0.0071)	-0.084***	(0.0075)	0.0013	(0.0026)	1.00	(0.0074)
Education (Ref=Primary)								
None	-0.14	(0.13)	-0.27*	(0.14)	-0.059	(0.043)	0.86	(0.11)
Preparatory	-0.39*	(0.16)	-0.36*	(0.17)	-0.14**	(0.051)	1.21	(0.18)
Secondary	-0.24	(0.21)	0.33	(0.23)	-0.0053	(0.068)	1.39	(0.27)
Technical Secondary	0.22	(0.13)	0.047	(0.14)	0.00027	(0.043)	1.05	(0.13)
Intermediate or Higher	0.14	(0.16)	0.75***	(0.17)	-0.034	(0.052)	0.98	(0.15)
Mother's Education (Ref=Primary)								
None	-0.64*	(0.31)	0.52	(0.33)	-0.11	(0.099)	1.04	(0.29)
Preparatory or Higher	-0.038	(0.090)	-0.11	(0.095)	-0.048	(0.029)	1.01	(0.084)
Separated (Ref=Married) 2012	1.59***	(0.12)	-2.27***	(0.13)	0.38***	(0.047)	1.82***	(0.27)
Older than 18 at First Marriage 2012	-0.13	(0.087)	-0.066	(0.092)	-0.017	(0.029)	1.01	(0.083)
Dowry (Ref=None) 2012								
No Response	-0.27*	(0.13)	0.23	(0.13)	0.018	(0.039)	1.03	(0.11)
Some	-0.13	(0.100)	0.24*	(0.11)	0.048	(0.031)	0.93	(0.080)
Marriage Process Duration (Months) 2012 Related to Husband (Ref=No) 2012	0.0017	(0.0033)	0.0027	(0.0034)	0.0011	(0.0010)	1.00	(0.0028)
No Response	0.37*	(0.17)	0.045	(0.18)	-0.086	(0.053)	1.12	(0.17)
Yes	-0.063	(0.092)	-0.078	(0.096)	-0.048	(0.028)	0.81**	(0.063)
Ever Worked	0.39**	(0.15)	0.17	(0.15)	0.20***	(0.048)	1.60**	(0.23)
Employment (Ref=Employed)								
Unemployed	0.26	(0.20)	0.31	(0.21)	0.16*	(0.063)	1.18	(0.22)
Retired	0.35*	(0.16)	0.12	(0.16)	0.17**	(0.052)	1.07	(0.17)
Birth Setting: Urban	-0.079	(0.11)	0.21	(0.12)	0.0055	(0.038)	1.04	(0.11)
Region (Ref=Greater Cairo)								
Alexandria & Suez Canal	-0.17	(0.19)	0.19	(0.20)	-0.25***	(0.071)	0.86	(0.17)
Urban Lower	-0.54**	(0.18)	0.38*	(0.19)	0.018	(0.067)	0.73	(0.13)
Urban Upper	-0.77***	(0.17)	0.28	(0.19)	-0.12	(0.066)	0.37***	(0.063)
Rural Lower	-0.64***	(0.18)	0.70***	(0.19)	0.042	(0.065)	0.61**	(0.11)
Rural Upper	-0.78***	(0.19)	-0.14	(0.21)	-0.13	(0.070)	0.44***	(0.081)
Household Wealth Index (Ref=Poorest)								
Poorer	-0.11	(0.10)	0.018	(0.11)	-0.057	(0.034)	1.04	(0.097)
Middle	-0.092	(0.11)	0.062	(0.11)	0.011	(0.036)	1.09	(0.11)
Richer	-0.016	(0.12)	0.13	(0.13)	-0.063	(0.040)	0.93	(0.10)
Richest	-0.17	(0.13)	-0.039	(0.14)	-0.052	(0.045)	1.09	(0.14)
Household Size	0.00067	(0.013)	-0.0094	(0.014)	0.000035	(0.0042)	0.97**	(0.011)
BIC	31396.8		32044.6		13593.1		7339.5	
Variance at Level 1 (Individual Level)	2.54		2.67		0.767			
Variance at Level 2 (PSU Level)	0.502		0.579		0.219		0.704	
ICC	0.037		0.045		0.076		0.131	

Notes: *p<0.05, ** p<0.01, *** p<0.001. Standard errors in parentheses

Chapter Six: Aim 3 Results – Relationship between Autonomy and Fertility

6.1 Introduction

In Chapters 4 and 5, I presented results examining the determinants of women's autonomy in Egypt. In this chapter, I examine the relationship between women's autonomy and fertility. Specifically, in this chapter, I present the results of the third study aim, which *examines the relationship between women's autonomy and fertility over the life course*. This aim has two main objectives, which are to assess the extent to which women's autonomy earlier in life affects fertility behavior over time and to assess how women's autonomy affects contraceptive use. The overall goal is to see if women with higher autonomy have fewer children over time. The main hypotheses are that higher levels of autonomy early in life are associated with decreased fertility, that women with more autonomy have fewer children, and women with more autonomy are more likely to use contraceptives.

The background section of the first chapter of this dissertation showed that women's autonomy is often linked to fertility and fertility behaviors. As described in Chapter 2, one of the most visible of all strategic decisions for women centers is the decision to have children. Women's participation in childbearing decisions demonstrates control over their bodies (Upadhyay et al. 2014). While female autonomy is a known determinant of fertility decline (Balk 1994; Dyson and Moore 1983; Mason 1986), little is known about exactly how autonomy and fertility are linked. There are several ideas about how women's household autonomy affects fertility decisions including that more equality means that woman's fertility desires play an increasingly important role in fertility decisions and that more equality means that more weight is given to the woman's health in fertility decisions (Mason 1987). There is reason to expect that women who exhibit control within the household will also have control over fertility.

This chapter is divided into several sections. I begin, in section 6.2, by describing the analytic approach. The samples are the same panel samples as presented in Chapter 5. For both married women in 2006 and ever married women by 2012, I examine the relationship between autonomy in 2006 and fertility in 2012. The outcomes of interest in this third research aim for women's fertility are having ever given birth and number of births. In section 6.3, I look at the distribution of births for both samples. In section 6.4, I examine the main effects on women's fertility of women's autonomy. In the fifth section, I present the multivariate linear regression models of women's fertility by autonomy, controlling on individual and household level factors for both samples. In sections 6.6, I present the multilevel OLS and logistic regression models of women's fertility by autonomy over time. In section 6.7, present the main effects for the relationship between autonomy and contraceptive use for the EDHS sample (sample characteristics in Chapter 4). In section 6.8, I present the multivariate and multilevel logistic regression models of contraceptive use. In section 6.9, the chapter closes with a summary of findings and discussion of the relationship between women's autonomy and fertility in Egypt over time.

6.2 Analytic Approach

I present the results of multilevel models for three outcomes: two dichotomous and one continuous. The continuous variable of number of births is modeled using multilevel OLS regression, and the dichotomous outcomes of having given birth or use of contraceptives are modeled using multilevel logistic regression. The distribution of number of births supported ordinary least squares models, but Poisson models were also run and can be found in the appendix (Appendix Tables 6A.1 – 6A.4).

For the analysis of the relationship between women's autonomy and fertility over time, I use two representative samples of women in Egypt from Waves II and III (2006 and 2012) of the

ELMPS. These samples are the same as those used for the analysis of autonomy over time in Chapter 5. The first sample consists of 15 to 49 year old women who are married in 2006 (N=6,269), have spouses in the ELMPS, and are present in the 2012 round of the survey (N=4,575). Of these women, 3,846 report on ever giving birth, and 3,749 women report on number of births. The second sample consists of 15 to 49 year old women who are married by 2012 and are therefore present in the 2012 round of the ELMPS (N=6,594). Of these women, 5,211 reported their complete birth history.

In order to provide a benchmark model for the observed effect of women's autonomy on fertility, my first set of models are at the individual level. First, I look at the bivariate relationships between each measure of autonomy (individual and joint household decision-making, mobility, financial autonomy, gender attitudes, and domestic violence attitudes) and having ever given birth and number of births for both the 2006 and 2012 samples. Then, in the multivariate OLS and Logistic regression models, I add all the remaining covariates. For the sample of women married in 2006, the covariates (age, education, mother's education, age at marriage, relationship to husband, value of dowry, duration of marriage process, work status, birth setting, region, household wealth, household size, husband's age, husband's education, husband's employment, and husband's migration) are all from 2006.

For the sample of women ever married by 2012, the marriage covariates (age at first marriage, value of dowry, duration of marriage process, and relationship to husband) are from the 2012 round of the ELMPS. In order to see if there is something different about fertility for the women married between 2006 and 2012, I also include a variable on whether these women were married between 2006 and 2012. For this sample, the measure of attitudes towards domestic violence is not included. These questions were only asked of married women in 2006;

therefore, if the women were married between 2006 and 2012, they would be missing on all responses and left out of the analysis. To capture the women married between 2006 and 2012, attitudes towards domestic violence must be left out of the autonomy measures. For the entire set of variables, collinearity diagnostics indicated a low variance inflation factor (VIF) of 1.86. The highest VIF of 3.44 was for having ever worked and currently working, which is well below the maximum recommended value of 5.

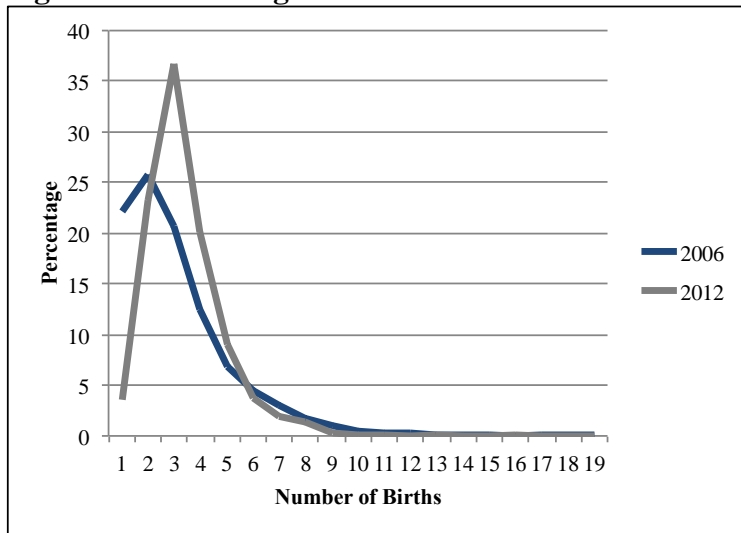
Given that individual and joint household decision-making capture all possible aspects of a woman's involvement in household decisions, my multivariate models also include a model of these variables as a pair along with the covariates. Additionally, given that each variable of women's autonomy measures a different aspect of autonomy, I also include multivariate models of all autonomy variables and the outcomes of ever given birth and number of births. My final set of models for both samples are multilevel with the first level being the individual and the second level being the community.

6.3 Distribution of Fertility in 2006 and 2012

Table 6L.1 shows the summary statistics for fertility: ever given birth and number of births in 2006 for the sample of married women in 2006 and how fertility differs for those who were lost to follow up by 2012. About 17% of women who had not given birth in 2006 were lost to follow up by 2012.

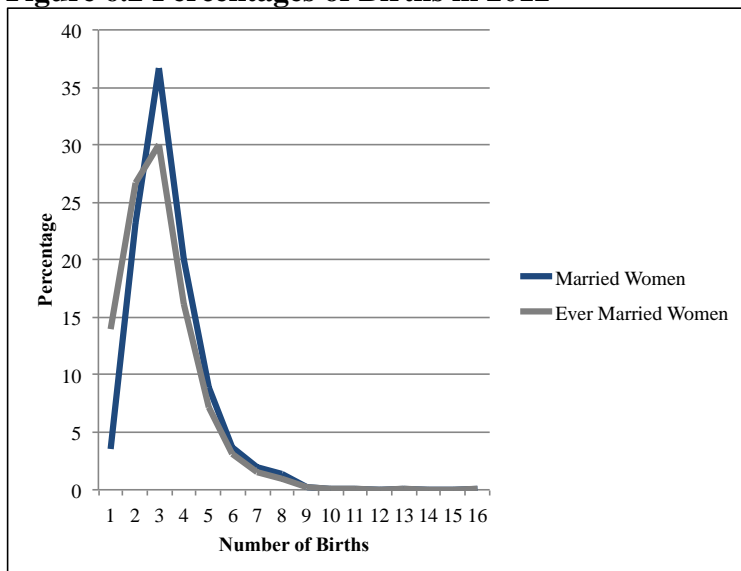
Table 6L.2 shows the summary statistics for the same fertility outcomes in 2012 for both married women in 2006 and ever married women by 2012. For women married in 2006, by Wave III (2012), 97% had given birth, and the mean number of births is 3.37 (SD=1.44). Figure 6.1 shows the percentages of births in 2006 and 2012 for married women in 2006.

Figure 6.1 Percentages of Births in 2006 and 2012 for Married Women in 2006



For ever married women by 2012, 92.5% have given birth, and the mean number of births is 2.99 (SD=1.52) (See Table 6L.2). Table 6L.3 shows the distribution of the number of births in 2006 for married women ages 15 to 49 years old in 2006. In 2006, 22% of women had one birth, and 26% had two births. Table 6L.4 shows the distribution of number of births in 2012 for both samples of women: married in 2006 and ever married by 2012. Figure 6.2 shows the percentages of births for both samples. For women married in 2006, 37% have had three births, and for ever-married women by 2012, 30% have had three births.

Figure 6.2 Percentages of Births in 2012



6.4 Bivariate Models of Fertility

Results from the logistic and ordinary least squares regression models predicting married and ever married women's ever given birth and number of births 2012 are shown in Tables 6L.5 – 6L.8. Tables 6L.5 and 6L.6 show bivariate results for married women in 2006 and Tables 6L.7 and 6L.8 show bivariate results for ever married women by 2012.

For women who were married in 2006, individual and joint household decision-making and mobility are significantly associated with ever having a birth (see Table 6L.5). However, these relationships are not in the expected direction. Bivariate associations indicate that in general, women with more autonomy are more likely to have a birth. For number of births, greater individual household decision-making is associated with a higher number of births. Financial autonomy is negatively associated with having more births. Women who have more positive attitudes towards gender norms are associated with 0.31 fewer births compared to women who have more negative attitudes. Interestingly, women with stronger beliefs in domestic violence are associated with a higher number of births. The bivariate relationships for all individual and household control variables are also shown in Tables 6L.5 and 6L.6.

Tables 6L.7 and 6L.8 shows the results from Logistic and OLS bivariate regression models of ever having a birth and number of births for women 15 to 49 years in 2006 who were ever married by 2012. For these women, individual and joint household decision-making, mobility, financial autonomy, and attitudes towards gender norms are significantly associated with ever having a birth ($p < 0.001$). Individual and joint household decision-making, mobility, and attitudes towards gender norms are also significantly associated with number of births ($p < 0.001$). However, most of these relationships are not in the expected direction. Women who participate in more decision-making and are more mobile are associated with a higher number of

births. Attitudes towards gender norms are in the expected direction as women who have more positive attitudes are associated with .42 fewer births in 2012 ($p < 0.001$).

6.5 Multivariate Models of Fertility

Results from the multivariate models are shown in Tables 6L.9 – 6L.16. In each of Tables 6L.9 – 6L.16, each autonomy variable is modeled with all the covariates. Then, Model 7 includes both individual and joint decision-making and the covariates, and Model 8 includes all measures of autonomy and the individual and household covariates.

For the relationship between individual participation in household decision-making and having ever given birth, of the women who were married in 2006, women who participate more have 36% higher odds of having given birth, all else held constant ($p < 0.001$) (see Table 6L.9). For each additional joint household decision women make, odds are 23% higher of ever having given birth, all else held constant. For each increase in mobility, odds are 178% higher of ever having given birth ($p < 0.001$). Across all models, women with an intermediate or higher education are more likely to have given birth ($p < 0.01$). With the addition of the control variables, financial autonomy, gender attitudes, and attitudes towards domestic violence are not significantly associated with having ever given birth. In Model 7, when including both individual and joint household decision-making, women who participate in either individual or joint decision-making are more likely to have given birth ($p < 0.001$) (see Table 6L.10). When all dimensions of autonomy are included, individual and joint household decision making and mobility are significantly associated with having ever given birth, holding all else constant.

Of the women who have ever been married by 2012, for each additional individual decision a woman makes, odds are 27% higher of having given birth in 2012 ($p < 0.001$) (see Model 1, Table 6L.11). Women with more freedom of movement also have higher odds of having given birth ($p < 0.001$). In Model 6, when including both individual and joint household

decision-making, women who participate in either individual or joint decision-making are more likely to have given birth ($p < 0.001$) (see Table 6L.12). Again, when including all measures of autonomy in Model 7, individual and joint household decision making and mobility are significantly associated with having ever given birth, holding all else constant. Since these models are all logistic, coefficients cannot be compared across models, but the pseudo R-squared and Bayesian information criteria (BIC) are provided as measures of model fit.

Table 6L.13 shows the betas and standard errors from the OLS models predicting women's number of births for married women 15 to 49 years old and married in 2006. The distribution of number of births supports an OLS model, but the Poisson models demonstrate the same results (Appendix Tables 6A.1 – 6A.4). Similar to the models of ever given birth, for ever additional individual household decision a woman makes, she has 0.02 higher number of births ($p < 0.001$). Model 3 shows that for each increase in freedom of movement from the house, the number of births is greater by 0.10 ($p < 0.001$). The relationship between attitudes towards gender norms and fertility is in the expected direction as for each increase in positive attitudes towards gender norms, a woman has 0.16 fewer births, on average. Even with the addition of all the measures of autonomy in Model 8 (see Table 6L.14), this relationship between attitudes towards gender norms and number of births remains. Model 8 also shows that individual and joint household decision-making and mobility are significantly associated with a greater number of births, holding all else constant. This model explains 35% of the variance in number of births and has the lowest BIC (12103.4), providing support for a model that includes all measures of women's autonomy. The same results for number of births in 2012 are observed for the sample of women who were 15 to 49 years old in 2006 and ever married by 2012 (see Tables 6L.15 and

6L.16). Model 8, with all measures of autonomy explains 47% of the variance in number of births (see Table 6L.16).

6.6 Fertility Multilevel Models

6.6a Multilevel Models of Ever Given Birth

My multilevel results show that across every model, the variance in women's fertility is due to differences between communities. Likelihood-ratio test comparing the multilevel model with a standard regression model confirms that the multilevel model is preferred. This is true across both the ever given birth and number of birth outcomes. Likelihood-ratio tests favored two level models of individuals nested in communities (or PSU). The intraclass correlation coefficients (ICC) support the two level models as the ICC's are between .04 and .06 for both outcomes and both samples suggesting that membership in particular communities explains some of the variance in women's fertility. Around 5% of the variance in women's fertility is captured by the multilevel approach.

Tables 6L.17 and 6L.18 shows the results of all multilevel logistic regression models predicting having ever given birth for the sample of married women in 2006. Similar to the multivariate models, individual household decision-making is associated with increased odds of having given birth. For each additional individual household decision a woman makes, she has 36% higher odds of ever having had a birth ($p < 0.001$). For each additional joint household decision women make, odds are 23% higher of ever having a birth ($p < 0.001$). As women's mobility is greater, her odds of having a birth are 178% times greater ($p < 0.001$), all else held constant. Financial autonomy, attitudes towards gender norms, and domestic violence attitudes are not significantly associated with ever having a birth as also seen the bivariate and multivariate results.

The only covariates that exhibit significant results are women's education, household

size, and husband's work status. Women with a secondary or higher education compared to those with just a primary education have increased odds of having had a birth ($p < 0.001$). Women living in larger households having higher odds of having a birth ($p < 0.001$), and husband's employment with an unemployed spouse being associated with lower odds of having a birth compared to having an employed spouse ($p < 0.05$). In contrast to the models of determinants of women's autonomy, region and urbanicity are not significantly associated with ever having a birth. Tables 6L.19 and 6L.20 shows the results of all multilevel logistic regression models predicting having ever given birth for the sample of ever married women by 2012. These results are consistent with those found for the sample of married women by 2006. Women who were married between 2006 and 2012 have lower odds of having a birth compared to those who did not get married during that time period.

6.6b Multilevel Models of Number of Births

The ICC of the multilevel OLS model for the sample of married women in 2006 shows that five percent of the variance in the number of births is explained by living in certain communities in Egypt (see Table 6L.21). Women who make more individual household decisions are associated with 0.024 higher numbers of births ($p < 0.05$). In the multilevel OLS models, joint decision-making alone is not significantly associated with number of births (see Model 2, Table 6L.21). However, when included with individual decision-making, women who participate in more joint decisions are associated with 0.023 greater numbers of births ($p < 0.01$) (see Model 7, Table 6L.22). A multilevel OLS model of combined decision-making and births is included in the Appendix (see Appendix Table 6A.5).

Similar to the individual level multivariate models, attitudes towards gender norms are significantly associated with number of births. Women with more positive attitudes towards

gender norms are associated with 0.14 fewer births, all else held constant. When all autonomy measures are included the model, gender norm attitudes are the only variable that exhibit a negative association with number of births (see Model 8, Table 6L.22). Women with more individual and joint decision-making and mobility are associated a greater number of births. In fact, on average, for each increase in mobility, women have 0.10 more births ($p < 0.001$). Again, women with more positive attitudes towards gender norms are associated with 0.16 fewer births, all else held constant. Multilevel OLS models that control for having a birth or number of births in 2006 on the relationship between autonomy and number of births in 2012 for married women in 2006 can be found in the Appendix (see Appendix Tables 6A.6 – 6A.9). Having had a birth in 2006 does not change the relationship between autonomy and number of births in 2012 (see Appendix Table 6A.7). However, when number of births in 2006 is included, there are no significant effects between autonomy and number of births in 2012 (see Appendix Table 6A.9).

In terms of the covariates, across all models in Tables 6L.21 and 6L.22, age at first marriage, dowry, region, household wealth, and household size are all significantly associated with number of births, all else held constant. For example, as seen in Model 8 (see Table 6L.22), on average, women who are older than 18 at first marriage have 0.57 fewer births than those who are younger than 18 at first marriage ($p < 0.001$). Women who have some dowry compared to those who have none have 0.13 higher births, all else constant ($p < 0.01$). Women who live in Upper Egypt are associated with higher births compared to women who live in greater Cairo. In fact, women in urban Upper Egypt have 0.56 greater number of births compared to women in Cairo ($p < 0.001$). On average, women in wealthier households have fewer births compared to women in the poorest households, all else held constant. Women in the richest households are associated with 0.32 fewer births compared to women in the poorest households ($p < 0.001$).

Tables 6L.23 and 6L.25 shows the results of all multilevel mixed effects OLS regression models predicting number of births for the sample of ever married women by 2012. Results are consistent with those found of the sample of women married in 2006. Models 1 and 2 show that each aspect of decision-making is not significantly associated with number of births. However, when paired, as in Model 6 (see Table 6L.24), each additional decision a woman makes is associated with a greater number of births. In Model 7, with all measures of autonomy, decision-making and mobility predict a greater number of births, and attitudes towards gender norms is associated with fewer births ($p < 0.001$). The covariates exhibit similar relationships to those found for the married in 2006 sample.

6.7 Women's Autonomy and Contraceptive Use

To address the second objective of the third research aim and the relationship between autonomy and contraceptive use, I use the sample of ever married women from the 2008 Egyptian Demographic and Health Survey (N=14,756). Sample characteristics are found in Chapter 4 (see Table 4D.1). Descriptive statistics for the measures of women's autonomy (individual and joint decision-making and attitudes towards domestic violence) are also found in Chapter 4 (see Table 4D.2). While not the main focus, multivariate ordinary least squares models for number of births were also analyzed for this EDHS sample, show that greater autonomy is associated with more births, and can be found in the Appendix (see Table 6A.10).

6.7a Distribution of Contraceptive Use

Table 6D.1 shows the distribution of contraceptive type and using a contraceptive method for ever married women in Egypt in 2008. Forty percent of women report not using a method, and sixty percent of women are using a contraceptive method. The IUD is the most common method choice as 35% of women report using an IUD. Close to 13% of women report using oral contraceptives, and only 1% of women use condoms. Twenty-four percent of women use a short

term method, 35% use a long acting reversible method, and 40% of women do not use a method.

6.7b Bivariate Relationships between Autonomy and Contraceptive Use

Table 6D.2 shows the bivariate logistic regression models of contraceptive use for ever married women ages 15 to 49. For each additional individual household decision, women are 8% more likely to use a contraceptive method ($p < 0.001$). For each additional joint household decision, women are 32% more likely to use a method ($p < 0.001$). For each additional favorable belief in domestic violence, women are 9% less likely to use a contraceptive method ($p < 0.001$). When both measures of decision-making are included, for each additional individual decision, women are 33% more likely to use a method and for each additional joint decision, women have 39% higher odds of using a method ($p < 0.001$). These relationships substantiate the need for the multivariate models. Multinomial logit models of no method vs. short term methods vs. long acting reversible contraceptive methods showed no significant difference in the relationship between autonomy and short-term and long-term methods.

6.8 Multivariate and Multilevel Models of Contraceptive Use

6.8a Multivariate Models of Contraceptive Use

Table 6D.3 shows the weighted multivariate logistic regression models of contraceptive use. Individual and joint decision-making are significantly associated with contraceptive use ($p < 0.001$). Domestic violence attitudes is not significantly associated with contraceptive use when accounting for covariates (see Model 3). However, in Model 5, when all measures of autonomy are included, all are significantly associated with contraceptive use. For each additional household decision a woman makes, she has 32% higher odds of using contraceptives ($p < 0.001$). For each additional joint household decision a woman makes, she has 36% higher odds of using contraceptive methods ($p < 0.001$) (see Model 5, Table 6D.3). The fact that both individual and joint household decision-making are significant point to their ability to measure a

unique aspect of autonomy. Surprisingly, for each additional belief in domestic violence, women are 4% more likely to use contraceptives ($p < 0.05$). Significant control variables include age, husband's age, having a son, living in Upper Egypt, and household size. Living in both rural and urban Upper Egypt is associated with lower odds of using contraceptives. Having a son is associated with three times the odds of using contraceptives, all else held constant ($p < 0.001$).

6.8b Multilevel Models of Contraceptive Use

Table 6D.4 shows the multilevel logistic regression models of contraceptive use. Results are similar to the multivariate models; however, domestic violence attitudes is not a significant predictor of contraceptive use. The ICC's range from 0.06 to 0.07 indicating that cluster membership explains between 6 and 7% of the variance in use of contraceptives. Again, women who participate in more individual and joint decision making have 30% higher odds of using contraceptives ($p < 0.001$), all else held equal (see Model 5). Significant control variables include age, Christianity, having a son, region, household wealth, household size, husband's age, and husband's education. Interestingly, those who are Christian have 21% higher odds of using contraceptives ($p < 0.001$). In alignment with previous results, those who live in rural Upper Egypt, have the lowest odds of using contraceptives, about 32% lower odds than those in Greater Cairo (see Model 5). Interestingly those in the poorer households have 13% lower odds of using contraceptives compared to those in the poorest households ($p < 0.01$). Women who have husband's with no education are 20% less likely to use contraceptives ($p < 0.05$), accounting for all other factors. The multilevel results align with the single level multivariate results except for the additional significance of Christianity, and husband's education, and the insignificance of domestic violence attitudes in predicting contraceptive use.

6.9 Summary of Key Findings

This study is one of the first to longitudinally describe the relationship between women's autonomy and fertility in Egypt, specifically for a sample of married and ever-married women of reproductive age. This work considers whether women's autonomy at an earlier point in time predicts later fertility. Similar to aims one and two, analysis for aim three uses a range of measures to operationalize autonomy, recognizing that each captures something different about a woman's experience. Hierarchical linear and logistic models indicate that membership in a particular Egyptian community does explain some of the variance in women's fertility.

For both the sample of married women in 2006 and ever-married women by 2012, my hypothesis that more autonomous women have fewer births is not supported. Specifically, when women's autonomy is measured as participation in household decision-making and mobility, more autonomous women are more likely to have had a birth and a greater number of births. The only measure of women's autonomy that consistent was associated with fewer births was attitudes towards gender norms. In Egypt, if women believed in aspects of gender equality like a woman's right to education and employment, right to be treated equally to men, and women's work life balance in 2006, then, by 2012, these women were associated with fewer births.

These mixed results across measures of autonomy and their relationship with fertility are consistent with research that found mixed effects or none at all (Lee-Rife 2010; Morgan et al. 2002; Mumtaz and Salway 2005, 2009) particularly among Muslim countries. There is a significant body of literature supporting the idea that more autonomous women have increased use of contraceptives and lower fertility (Jejeebhoy 1995; Mason and Smith 2000). A recent review of women's empowerment and fertility review noted that ten studies found significant inverse associations between women's empowerment and number of children and twenty-two yielded a combination of significant inverse findings and non-significant findings (Upadhyay et

al. 2014). However, my results are consistent with the three studies that found positive associations (Upadhyay et al. 2014).

Contributing further to the understanding of the relationship between autonomy and fertility, for the sample of ever married women in 2008 from the EDHS, more autonomous women have greater odds of using contraceptives. Women who use contraceptives are also associated with a higher number of births in 2008; although, given that the EDHS data are cross sectional, it is unclear which comes first (see Appendix Table 6A.10). These results imply that in Egypt, autonomous women are using a contraceptive method, many are using a long acting reversible contraceptive (35%), and autonomous women are having more children.

In Egypt, current family composition has a strong effect on desired fertility, reflecting complex family preferences (Baschieri 2007). There is a strong desire in Egyptian society to have at least two children and at least one boy (Yount et al. 2000). Women with sons are more likely to use a contraceptive method. In Egypt, it may be that more autonomous women fulfilled social expectations of high fertility, although they personally desired smaller families. Importantly, when controlling for having had a birth in 2006, the results between autonomy and births in 2012 remain the same, which implies that women and more autonomous women might be delaying childbearing (see Appendix Table 6A.7). It would be useful to know fertility preferences, but the data does not include this information. Additionally, my second aim results show that fertility is a source of autonomy for women in Egypt, which further complicates the relationship between autonomy and fertility.

Given the strong implications of women's public behavior for family reputation and honor in the Egyptian context and the many norms governing women's behavior, reproductive events are likely to be influenced by other factors like community-specific norms. My results

show that across all samples and outcomes, the total variance in fertility is partially due to difference in communities. The significance of the clustering highlights the importance of the woman's community in her fertility behavior within the household. In this chapter, I have evaluated empirical evidence for a relationship between women's autonomy and fertility over time in Egypt. Even when controlling on several individual and household-level factors and accounting for cluster-level variance, I find support for more autonomous women having more births over time.

Chapter Six Results Tables

Table 6L.1 Summary Statistics: Fertility Outcome Variables of Panel of Married Women 15 to 49 years old at Wave II, 2006 & 2012 Egyptian Labor Market Panel Survey

Key Outcomes in 2006	Wave II (2006)		Lost to F/U		Wave III (2012)	
	N	% or Mean (SD)	N	% or Mean (SD)	N	% or Mean (SD)
Ever Given Birth in 2006						
No	643	11.21	197	16.98	446	9.77
Yes	5,092	88.79	963	83.02	4,129	90.2
Mean (SD)	5,735	0.89 (0.32)	1,160	0.83 (0.38)	4,575	0.91 (0.27)
Number of Births in 2006	5,092	3.12 (2.17)	963	2.52 (1.89)	4,129	2.94 (2.31)

Table 6L.2 Mean (SD) or % of Fertility Outcome Variables in Wave III, 2012 Egyptian Labor Market Panel Survey

Key Outcomes in 2012	Married Women 2006		Ever Married Women 2012	
	N	% or Mean (SD)	N	% or Mean (SD)
Ever Given Birth in 2012				
No	97	2.52	423	7.51
Yes	3,749	97.48	5,211	92.49
Mean (SD)	3,846	0.97 (0.16)	5,643	0.92 (0.26)
Number of Births in 2012	3,749	3.37 (1.44)	5,211	2.99 (1.52)

Table 6L.3 Distribution of Number of Births in 2006, Married Women ages 15 to 49 years old at Wave II, 2006 Egyptian Labor Market Panel Survey N=5,092

Count	Frequency	Percent
1	1,127	22.13
2	1,316	25.84
3	1,057	20.76
4	640	12.57
5	346	6.79
6	225	4.42
7	152	2.99
8	90	1.77
9	51	1
10	28	0.55
11	19	0.37
12	16	0.31
13	6	0.12
14	6	0.12
15	7	0.14
17	1	0.02
18	3	0.06
19	2	0.04
Total	5,092	100

Table 6L.4 Distribution of Number of Births in 2012, 2012 Egyptian Labor Market Panel Survey

Count	Married at Wave II N=3,749		Ever Married at Wave III N=5,211	
	Frequency	Percent	Frequency	Percent
1	131	3.49	731	14.03
2	872	23.26	1,388	26.64
3	1,374	36.65	1,563	29.99
4	752	20.06	838	16.08
5	336	8.96	374	7.18
6	140	3.73	159	3.05
7	74	1.97	83	1.59
8	50	1.33	51	0.98
9	10	0.27	12	0.23
10	5	0.13	5	0.1
11	2	0.05	4	0.08
13	2	0.05	2	0.04
16	1	0.03	1	0.02
Total	3,749	100	5,211	100

Table 6L.5 OLS and Logistic Bivariate Regression Models Predicting Fertility in 2012, Married Women Ages 15 to 49 at Wave II, 2006 and 2012 Egyptian Labor Market Panel Survey

Key Variables in 2006	Ever Given Birth 2012 N=3,846		Number of Births 2012 N=3,749	
	Logistic		OLS	
	OR	(SE)	b	(SE)
Individual Household Decision-Making	1.27***	(0.076)	0.036***	(0.010)
Joint Household Decision-Making	1.23***	(0.055)	-0.015	(0.0088)
Mobility	2.84***	(0.47)	0.16***	(0.035)
Financial Autonomy	0.82	(0.20)	-0.26***	(0.059)
Gender Attitudes	1.32	(0.23)	-0.31***	(0.042)
Domestic Violence Attitudes	1.07	(0.057)	0.080***	(0.011)
Age (yrs)	1.00	(0.015)	0.077***	(0.0031)
Education (Ref=Primary)				
None	1.24	(0.43)	0.48***	(0.088)
Preparatory	1.29	(0.66)	0.15	(0.12)
Secondary	1.56	(0.56)	-0.42***	(0.088)
Intermediate or Higher	2.32	(1.06)	-0.57***	(0.098)
Mother's Education (Ref=Primary)				
None	0.38	(0.28)	-0.93***	(0.27)
Preparatory or Higher	1.08	(0.29)	-0.52***	(0.059)
Older than 18 at First Marriage	0.72	(0.19)	-0.96***	(0.054)
Dowry (Ref=None)				
No Response	0.93	(0.23)	0.000059	(0.058)
Some	1.22	(0.31)	0.44***	(0.055)
Marriage Process Duration (Months)	1.01	(0.0086)	-0.0078***	(0.0018)
Related to Husband	0.78	(0.16)	0.34***	(0.050)
Ever Worked	0.99	(0.22)	0.17***	(0.052)
Employment (Ref=Employed)				
Unemployed	1.92	(1.19)	-0.63***	(0.11)
Retired	1.05	(0.26)	-0.21***	(0.057)
Husband's Age (yrs)	0.99	(0.012)	0.056***	(0.0027)
Husband's Education (Ref=Primary)				
None	0.65	(0.23)	0.40***	(0.078)
Preparatory	0.69	(0.36)	-0.049	(0.12)
Secondary	0.90	(0.33)	-0.28***	(0.077)
Intermediate or Higher	1.18	(0.49)	-0.36***	(0.083)
Husband's Employment (Ref=Employed)				
Unemployed	0.41	(0.30)	-0.19	(0.26)
Out of Labor Force	2.23	(2.25)	-0.051	(0.16)
Husband's Migration (Ref=No)				
No Response	0.74	(0.21)	0.30**	(0.096)
Yes	1.21	(0.57)	0.30**	(0.096)

Notes: *p<0.05, ** p<0.01, *** p<0.001. Standard errors in parentheses

Table 6L.6 OLS and Logistic Bivariate Regression Models Predicting Fertility in 2012, Married Women Ages 15 to 49 at Wave II, 2006 and 2012 Egyptian Labor Market Panel Survey

Key Variables in 2006	Ever Given Birth 2012 N=3,846		Number of Births 2012 N=3,749	
	Logistic		OLS	
	OR	(SE)	b	(SE)
Current Location: Urban	0.94	-0.19	-0.40***	(0.047)
Birth Setting: Urban	0.92	-0.19	-0.35***	(0.047)
Household Size	1.89***	-0.15	0.20***	(0.0079)
Region (Ref=Greater Cairo)				
Alexandria & Suez Canal	1.58	-0.81	-0.18	(0.11)
Urban Lower	1.28	-0.55	-0.031	(0.10)
Urban Upper	1.1	-0.43	0.52***	(0.095)
Rural Lower	1.21	-0.43	0.27**	(0.086)
Rural Upper	1.34	-0.5	0.88***	(0.088)
Household Wealth Index (Ref=Poorest)				
Poorer	0.73	-0.24	-0.36***	(0.072)
Middle	0.73	-0.24	-0.69***	(0.072)
Richer	1.23	-0.47	-0.76***	(0.074)
Richest	0.67	-0.24	-0.72***	(0.079)

Notes: *p<0.05, ** p<0.01, *** p<0.001. Standard errors in parentheses

Table 6L.7 OLS and Logistic Bivariate Regression Models Predicting Fertility, Women Ages 15 to 49 at Wave II who are Ever Married by Wave III, 2006 and 2012 Egyptian Labor Market Panel Survey

Key Variables in 2006	Ever Given Birth 2012 N=5,643		Number of Births 2012 N=5,211	
	Logistic		OLS	
	OR	(SE)	b	(SE)
Individual Household Decision-Making	1.45***	(0.051)	0.13***	(0.0083)
Joint Household Decision-Making	1.20***	(0.027)	0.072***	(0.0077)
Mobility	3.25***	(0.26)	0.50***	(0.027)
Financial Autonomy	1.77***	(0.28)	0.091	(0.055)
Gender Attitudes	0.69***	(0.066)	-0.42***	(0.038)
Age (yrs)	1.09***	(0.0084)	0.100***	(0.0023)
Education (Ref=Primary)				
None	1.40	(0.28)	0.58***	(0.079)
Preparatory	0.52**	(0.11)	-0.57***	(0.098)
Secondary	0.49**	(0.12)	-1.41***	(0.12)
Technical Secondary	1.39	(0.27)	-0.42***	(0.078)
Intermediate or Higher	1.38	(0.31)	-0.50***	(0.088)
Mother's Education (Ref=Primary)				
None	0.25***	(0.073)	-1.10***	(0.20)
Preparatory or Higher	0.69**	(0.080)	-0.63***	(0.051)
Married btw 2006 and 2012	0.12***	(0.013)	-1.76***	(0.046)
Older than 18 at First Marriage in 2012	0.26***	(0.054)	-1.15***	(0.050)
Dowry in 2012 (Ref=None)				
No Response	1.57***	(0.18)	1.03***	(0.044)
Some	1.06	(0.14)	0.21***	(0.055)
Marriage Process Duration in 2012 (Months)	1.00	(0.0039)	-0.026***	(0.0017)
Related to Husband in 2012 (Ref=No)				
No Response	2.36***	(0.33)	1.44***	(0.045)
Yes	1.46**	(0.19)	0.33***	(0.050)
Ever Worked	1.22	(0.15)	0.35***	(0.047)
Employment (Ref=Employed)				
Unemployed	0.80	(0.17)	-0.85***	(0.090)
Retired	0.97	(0.12)	-0.30***	(0.051)

Notes: *p<0.05, ** p<0.01, *** p<0.001. Standard errors in parentheses

Table 6L.8 OLS and Logistic Bivariate Regression Models Predicting Fertility, Women Ages 15 to 49 at Wave II who are Ever Married by Wave III, 2006 and 2012 Egyptian Labor Market Panel Survey

Key Variables in 2006	Ever Given Birth 2012 N=5,643		Number of Births 2012 N=5,211	
	Logistic		OLS	
	OR	(SE)	b	(SE)
Current Location: Urban	0.84	(0.085)	-0.30***	(0.042)
Birth Setting: Urban	0.78*	(0.079)	-0.27***	(0.042)
Household Size	1.02	(0.019)	0.12***	(0.0075)
Region (Ref=Greater Cairo)				
Alexandria & Suez Canal	0.88	(0.20)	-0.18	(0.10)
Urban Lower	1.13	(0.25)	-0.077	(0.091)
Urban Upper	0.94	(0.19)	0.45***	(0.087)
Rural Lower	1.28	(0.24)	0.15	(0.078)
Rural Upper	1.07	(0.20)	0.71***	(0.080)
Household Wealth Index (Ref=Poorest)				
Poorer	1.05	(0.16)	-0.20**	(0.064)
Middle	1.21	(0.19)	-0.45***	(0.064)
Richer	1.20	(0.20)	-0.49***	(0.067)
Richest	0.90	(0.15)	-0.57***	(0.070)

Notes: *p<0.05, ** p<0.01, *** p<0.001. Standard errors in parentheses

Table 6L.9 Odds Ratios and Standard Errors from Logistic Regression Models Predicting Women's Fertility (Ever Given Birth) in 2012, Married Women Ages 15 to 49 at Wave II, 2006 and 2012 Egyptian Labor Market Panel Survey

Key Variables in 2006	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6	
	OR	(SE)	OR	(SE)	OR	(SE)	OR	(SE)	OR	(SE)	OR	(SE)
Individual Household Decision-Making	1.36***	(0.098)	-	-	-	-	-	-	-	-	-	-
Joint Household Decision-Making	-	-	1.23***	(0.064)	-	-	-	-	-	-	-	-
Mobility	-	-	-	-	2.78***	(0.54)	-	-	-	-	-	-
Financial Autonomy	-	-	-	-	-	-	0.93	(0.25)	-	-	-	-
Gender Attitudes	-	-	-	-	-	-	-	-	1.33	(0.26)	-	-
Domestic Violence Attitudes	-	-	-	-	-	-	-	-	-	-	1.05	(0.061)
Age (yrs)	0.96	(0.025)	0.97	(0.025)	0.96	(0.025)	0.97	(0.025)	0.96	(0.025)	0.97	(0.025)
Education (Ref=Primary)												
None	1.34	(0.52)	1.43	(0.56)	1.39	(0.54)	1.36	(0.52)	1.38	(0.53)	1.37	(0.53)
Preparatory	1.39	(0.77)	1.41	(0.77)	1.35	(0.75)	1.36	(0.74)	1.36	(0.74)	1.35	(0.73)
Secondary	2.42*	(0.98)	2.45*	(0.99)	2.38*	(0.98)	2.44*	(0.99)	2.31*	(0.93)	2.47*	(1.00)
Intermediate or Higher	6.36**	(3.86)	6.67**	(4.04)	6.65**	(4.06)	6.65**	(4.00)	6.04**	(3.63)	6.78**	(4.08)
Mother's Education (Ref=Primary)												
None	0.26	(0.22)	0.28	(0.25)	0.32	(0.28)	0.28	(0.24)	0.27	(0.24)	0.28	(0.24)
Preparatory or Higher	1.09	(0.35)	0.98	(0.32)	1.16	(0.38)	1.03	(0.33)	1.04	(0.33)	1.03	(0.33)
Older than 18 at First Marriage	0.82	(0.25)	0.88	(0.27)	0.75	(0.23)	0.83	(0.25)	0.85	(0.26)	0.83	(0.25)
Dowry (Ref=None)												
No Response	0.71	(0.20)	0.73	(0.21)	0.69	(0.20)	0.76	(0.21)	0.76	(0.21)	0.76	(0.21)
Some	1.11	(0.30)	1.16	(0.32)	1.11	(0.31)	1.11	(0.30)	1.15	(0.31)	1.12	(0.30)
Marriage Process Duration (Months)	1.01	(0.0088)	1.01	(0.0090)	1.01	(0.0090)	1.01	(0.0089)	1.01	(0.0089)	1.01	(0.0089)
Related to Husband	0.70	(0.16)	0.65	(0.15)	0.71	(0.17)	0.66	(0.15)	0.66	(0.15)	0.67	(0.16)
Ever Worked	1.34	(0.66)	1.33	(0.65)	1.29	(0.64)	1.42	(0.68)	1.41	(0.68)	1.41	(0.68)
Employment (Ref=Employed)												
Unemployed	2.52	(1.98)	2.31	(1.79)	2.76	(2.20)	2.41	(1.87)	2.38	(1.85)	2.42	(1.88)
Retired	1.83	(0.98)	1.80	(0.97)	1.94	(1.04)	1.79	(0.96)	1.86	(0.99)	1.80	(0.96)
Birth Setting: Urban	0.81	(0.28)	0.78	(0.28)	0.78	(0.26)	0.83	(0.28)	0.83	(0.28)	0.83	(0.29)
Region (Ref=Greater Cairo)												
Alexandria & Suez Canal	2.28	(1.26)	1.76	(0.97)	2.44	(1.36)	1.83	(1.00)	1.83	(1.00)	1.89	(1.04)
Urban Lower	1.17	(0.57)	1.46	(0.71)	1.25	(0.61)	1.23	(0.59)	1.25	(0.60)	1.23	(0.59)
Urban Upper	1.42	(0.64)	1.13	(0.50)	1.58	(0.72)	1.04	(0.46)	1.02	(0.45)	1.04	(0.46)
Rural Lower	0.78	(0.37)	0.90	(0.44)	0.82	(0.39)	0.79	(0.38)	0.80	(0.38)	0.78	(0.37)
Rural Upper	0.80	(0.41)	0.73	(0.38)	0.89	(0.45)	0.65	(0.33)	0.65	(0.33)	0.64	(0.32)
Household Wealth Index (Ref=Poorest)												
Poorer	0.74	(0.27)	0.68	(0.25)	0.80	(0.29)	0.72	(0.26)	0.72	(0.26)	0.72	(0.26)
Middle	0.63	(0.24)	0.57	(0.21)	0.68	(0.26)	0.61	(0.23)	0.59	(0.22)	0.61	(0.23)
Richer	1.00	(0.46)	0.80	(0.37)	1.06	(0.49)	0.94	(0.43)	0.90	(0.41)	0.94	(0.43)
Richest	0.44	(0.21)	0.32*	(0.15)	0.42	(0.20)	0.39*	(0.19)	0.39*	(0.18)	0.39*	(0.19)
Household Size	2.26***	(0.20)	2.27***	(0.21)	2.10***	(0.19)	2.37***	(0.22)	2.39***	(0.22)	2.35***	(0.22)
Husband's Age (yrs)	0.97	(0.019)	0.98	(0.020)	0.98	(0.020)	0.97	(0.019)	0.98	(0.019)	0.98	(0.019)
Husband's Education (Ref=Primary)												
None	0.59	(0.23)	0.56	(0.22)	0.62	(0.24)	0.59	(0.23)	0.59	(0.23)	0.58	(0.22)
Preparatory	0.76	(0.42)	0.86	(0.48)	0.99	(0.55)	0.87	(0.48)	0.84	(0.46)	0.88	(0.49)
Secondary	0.85	(0.34)	0.81	(0.33)	0.96	(0.39)	0.85	(0.34)	0.85	(0.34)	0.86	(0.35)
Intermediate or Higher	1.09	(0.56)	0.95	(0.48)	1.22	(0.63)	1.04	(0.53)	1.04	(0.53)	1.04	(0.53)
Husband's Employment (Ref=Employed)												
Unemployed	0.16*	(0.13)	0.14*	(0.12)	0.11**	(0.088)	0.16*	(0.13)	0.17*	(0.13)	0.17*	(0.13)

Out of Labor Force	3.16	(3.39)	2.59	(2.70)	2.91	(3.11)	2.80	(2.94)	2.62	(2.76)	2.67	(2.81)
Husband's Migration (Ref=No)												
No Response	0.89	(0.30)	0.85	(0.29)	0.82	(0.28)	0.84	(0.28)	0.85	(0.28)	0.85	(0.28)
Yes	1.27	(0.64)	1.16	(0.58)	1.28	(0.64)	1.21	(0.60)	1.19	(0.59)	1.22	(0.60)
Observations	3,846		3,846		3,846		3,846		3,846		3,846	
Pseudo R2	0.2008		0.1957		0.2099		0.1768		0.1706		0.1776	
BIC	1029.0		1033.6		1020.8		1050.8		1048.8		1050.0	

Notes: *p<0.05, ** p<0.01, *** p<0.001. Standard errors in parentheses

Table 6L.10 Odds Ratios and Standard Errors from Logistic Regression Models Predicting Women's Fertility (Ever Given Birth) in 2012, Married Women Ages 15 to 49 at Wave II, 2006 and 2012 Egyptian Labor Market Panel Survey

Key Variables	Model 7		Model 8	
	OR	(SE)	OR	(SE)
Individual Household Decision-Making	1.49***	(0.11)	1.37***	(0.11)
Joint Household Decision-Making	1.33***	(0.068)	1.35***	(0.073)
Mobility	-	-	2.17***	(0.45)
Financial Autonomy	-	-	0.90	(0.26)
Gender Attitudes	-	-	1.19	(0.25)
Domestic Violence Attitudes	-	-	1.11	(0.067)
Age (yrs)	0.95	(0.025)	0.95	(0.026)
Education (Ref=Primary)				
None	1.40	(0.56)	1.43	(0.57)
Preparatory	1.44	(0.81)	1.34	(0.77)
Secondary	2.43*	(1.01)	2.34*	(0.99)
Intermediate or Higher	6.59**	(4.11)	6.84**	(4.32)
Mother's Education (Ref=Primary)				
None	0.25	(0.23)	0.28	(0.26)
Preparatory or Higher	1.02	(0.34)	1.09	(0.37)
Older than 18 at First Marriage	0.89	(0.27)	0.86	(0.27)
Dowry (Ref=None)				
No Response	0.61	(0.17)	0.57	(0.17)
Some	1.11	(0.31)	1.13	(0.32)
Marriage Process Duration (Months)	1.01	(0.0088)	1.01	(0.0089)
Related to Husband	0.69	(0.17)	0.74	(0.18)
Ever Worked	1.13	(0.56)	1.10	(0.56)
Employment (Ref=Employed)				
Unemployed	2.07	(1.65)	2.13	(1.73)
Retired	1.74	(0.96)	1.93	(1.07)
Birth Setting: Urban	0.70	(0.25)	0.63	(0.23)
Region (Ref=Greater Cairo)				
Alexandria & Suez Canal	2.47	(1.41)	2.96	(1.72)
Urban Lower	1.60	(0.80)	1.62	(0.83)
Urban Upper	1.99	(0.94)	2.37	(1.14)
Rural Lower	0.98	(0.48)	0.93	(0.46)
Rural Upper	1.13	(0.60)	1.22	(0.65)
Household Wealth Index (Ref=Poorest)				
Poorer	0.70	(0.26)	0.73	(0.27)
Middle	0.58	(0.22)	0.62	(0.24)
Richer	0.85	(0.38)	0.88	(0.41)
Richest	0.36*	(0.17)	0.37*	(0.18)
Household Size	2.11***	(0.18)	1.93***	(0.16)
Husband's Age (yrs)	0.98	(0.020)	0.99	(0.021)
Husband's Education (Ref=Primary)				
None	0.56	(0.22)	0.54	(0.22)
Preparatory	0.70	(0.39)	0.80	(0.45)
Secondary	0.77	(0.32)	0.84	(0.35)
Intermediate or Higher	0.98	(0.51)	1.09	(0.58)
Husband's Employment (Ref=Employed)				
Unemployed	0.12*	(0.10)	0.092**	(0.076)
Out of Labor Force	2.88	(3.06)	2.75	(2.95)
Husband's Migration (Ref=No)				
No Response	0.94	(0.33)	0.90	(0.33)
Yes	1.24	(0.63)	1.33	(0.69)
Observations	3,846		3,846	
Pseudo R2	0.2388		0.2593	
BIC	1002.9		1017.3	

Notes: *p<0.05, ** p<0.01, *** p<0.001. Standard errors in parentheses

Table 6L.11 Odds Ratios and Standard Errors from Logistic Regression Models Predicting Women's Fertility (Ever Given Birth) in 2012, Women Ages 15 to 49 at Wave II and Ever Married by Wave III, 2006 and 2012 Egyptian Labor Market Panel Survey

Key Variables	Model 1		Model 2		Model 3		Model 4		Model 5	
	OR	(SE)	OR	(SE)	OR	(SE)	OR	(SE)	OR	(SE)
Individual Household Decision-Making	1.27***	(0.053)	-	-	-	-	-	-	-	-
Joint Household Decision-Making	-	-	1.03	(0.026)	-	-	-	-	-	-
Mobility	-	-	-	-	1.98***	(0.19)	-	-	-	-
Financial Autonomy	-	-	-	-	-	-	1.06	(0.19)	-	-
Gender Attitudes	-	-	-	-	-	-	-	-	0.93	(0.097)
Age (yrs)	0.98	(0.016)	1.00	(0.016)	0.99	(0.016)	1.00	(0.016)	1.00	(0.016)
Education (Ref=Primary)										
None	0.97	(0.22)	0.93	(0.21)	0.92	(0.21)	0.92	(0.21)	0.91	(0.20)
Preparatory	1.05	(0.25)	1.02	(0.24)	1.04	(0.25)	1.02	(0.24)	1.02	(0.24)
Secondary	2.06***	(0.45)	1.93**	(0.42)	2.02**	(0.44)	1.94**	(0.42)	1.97**	(0.43)
Intermediate or Higher	2.58***	(0.72)	2.36**	(0.66)	2.40**	(0.67)	2.38**	(0.66)	2.44**	(0.68)
Mother's Education (Ref=Primary)										
None	0.45*	(0.16)	0.49*	(0.17)	0.50*	(0.17)	0.48*	(0.17)	0.48*	(0.17)
Preparatory or Higher	0.95	(0.14)	0.94	(0.14)	0.97	(0.14)	0.94	(0.14)	0.94	(0.14)
Married in 2012	2.97***	(0.64)	2.76***	(0.59)	2.79***	(0.61)	2.82***	(0.60)	2.80***	(0.60)
Older than 18 at First Marriage (2012)	0.36***	(0.081)	0.37***	(0.082)	0.37***	(0.083)	0.36***	(0.082)	0.37***	(0.082)
Dowry (Ref=None) (2012)										
No Response	0.83	(0.15)	0.82	(0.14)	0.83	(0.15)	0.82	(0.14)	0.83	(0.15)
Some	1.07	(0.16)	1.06	(0.16)	1.07	(0.16)	1.06	(0.16)	1.06	(0.16)
Marriage Process Duration (Months) (2012)	1.01	(0.0054)	1.01	(0.0054)	1.01	(0.0054)	1.01	(0.0054)	1.01	(0.0054)
Married btw 2006 and 2012	0.11***	(0.018)	0.100***	(0.017)	0.13***	(0.021)	0.094***	(0.015)	0.094***	(0.016)
Related to Husband (Ref=No) (2012)										
No Response	1.09	(0.33)	1.06	(0.32)	1.08	(0.33)	1.07	(0.32)	1.07	(0.32)
Yes	1.19	(0.17)	1.18	(0.17)	1.17	(0.17)	1.18	(0.17)	1.18	(0.17)
Ever Worked	1.33	(0.44)	1.41	(0.47)	1.26	(0.42)	1.41	(0.47)	1.42	(0.47)
Employment (Ref=Employed)										
Unemployed	1.52	(0.58)	1.51	(0.57)	1.44	(0.55)	1.53	(0.58)	1.53	(0.58)
Retired	1.58	(0.55)	1.58	(0.55)	1.50	(0.52)	1.58	(0.55)	1.58	(0.55)
Birth Setting: Urban	0.65	(0.15)	0.67	(0.15)	0.68	(0.15)	0.67	(0.15)	0.67	(0.15)
Region (Ref=Greater Cairo)										
Alexandria & Suez Canal	1.04	(0.27)	0.91	(0.23)	1.04	(0.27)	0.92	(0.23)	0.92	(0.23)
Urban Lower	1.18	(0.28)	1.20	(0.29)	1.22	(0.29)	1.19	(0.28)	1.18	(0.28)
Urban Upper	0.92	(0.21)	0.80	(0.18)	0.96	(0.22)	0.81	(0.18)	0.81	(0.18)
Rural Lower	0.86	(0.25)	0.88	(0.25)	0.95	(0.27)	0.87	(0.25)	0.86	(0.25)
Rural Upper	0.64	(0.19)	0.57	(0.17)	0.72	(0.22)	0.57	(0.17)	0.57	(0.17)
Household Wealth Index (Ref=Poorest)										
Poorer	0.88	(0.15)	0.87	(0.15)	0.88	(0.15)	0.86	(0.15)	0.86	(0.15)
Middle	0.88	(0.16)	0.88	(0.16)	0.90	(0.16)	0.87	(0.16)	0.87	(0.16)
Richer	0.94	(0.19)	0.91	(0.18)	0.92	(0.19)	0.90	(0.18)	0.91	(0.18)
Richest	0.92	(0.20)	0.87	(0.19)	0.94	(0.21)	0.87	(0.19)	0.87	(0.19)
Household Size	1.18***	(0.032)	1.17***	(0.032)	1.17***	(0.032)	1.17***	(0.032)	1.17***	(0.032)
Observations	5,643		5,643		5,643		5,643		5,643	
Pseudo R-squared	0.1922		0.1798		0.1977		0.1795		0.1796	
BIC	2702.8		2740.0		2686.3		2741.2		2740.8	

Notes: *p<0.05, ** p<0.01, *** p<0.001. Standard errors in parentheses

Table 6L.12 Odds Ratios and Standard Errors from Logistic Regression Models Predicting Women's Fertility (Ever Given Birth) in 2012, Women Ages 15 to 49 at Wave II and Ever Married by Wave III, 2006 and 2012 Egyptian Labor Market Panel Survey

Key Variables	Model 6		Model 7	
	OR	(SE)	OR	(SE)
Individual Household Decision-Making	1.30***	(0.055)	1.21***	(0.054)
Joint Household Decision-Making	1.07**	(0.027)	1.07**	(0.028)
Mobility	-	-	1.75***	(0.17)
Financial Autonomy	-	-	0.99	(0.18)
Gender Attitudes	-	-	0.89	(0.093)
Age (yrs)	0.99	(0.016)	0.98	(0.016)
Education (Ref=Primary)				
None	0.99	(0.22)	0.96	(0.22)
Preparatory	1.04	(0.25)	1.06	(0.25)
Secondary	2.04**	(0.44)	2.10***	(0.46)
Intermediate or Higher	2.52***	(0.70)	2.55***	(0.72)
Mother's Education (Ref=Primary)				
None	0.46*	(0.16)	0.49*	(0.17)
Preparatory or Higher	0.96	(0.14)	0.98	(0.14)
Married in 2012	2.84***	(0.62)	2.72***	(0.60)
Older than 18 at First Marriage (2012)	0.36***	(0.081)	0.36***	(0.083)
Dowry (Ref=None) (2012)				
No Response	0.83	(0.15)	0.83	(0.15)
Some	1.06	(0.16)	1.07	(0.16)
Marriage Process Duration (Months) (2012)	1.01	(0.0054)	1.01	(0.0054)
Married btw 2006 and 2012	0.13***	(0.024)	0.17***	(0.030)
Related to Husband (Ref=No) (2012)				
No Response	1.06	(0.32)	1.04	(0.32)
Yes	1.20	(0.18)	1.19	(0.18)
Ever Worked	1.31	(0.44)	1.23	(0.41)
Employment (Ref=Employed)				
Unemployed	1.50	(0.57)	1.45	(0.55)
Retired	1.57	(0.55)	1.53	(0.54)
Birth Setting: Urban	0.65	(0.15)	0.66	(0.15)
Region (Ref=Greater Cairo)				
Alexandria & Suez Canal	1.02	(0.26)	1.08	(0.28)
Urban Lower	1.20	(0.29)	1.21	(0.29)
Urban Upper	0.91	(0.21)	1.01	(0.23)
Rural Lower	0.86	(0.25)	0.92	(0.27)
Rural Upper	0.63	(0.19)	0.74	(0.22)
Household Wealth Index (Ref=Poorest)				
Poorer	0.89	(0.15)	0.90	(0.15)
Middle	0.89	(0.16)	0.91	(0.17)
Richer	0.93	(0.19)	0.93	(0.19)
Richest	0.92	(0.20)	0.96	(0.21)
Household Size	1.18***	(0.032)	1.17***	(0.032)
Observations	5,643		5,643	
Pseudo R-squared	0.1949		0.206	
BIC	2703.5		2696.1	

Notes: *p<0.05, ** p<0.01, *** p<0.001. Standard errors in parentheses

Table 6L.13 Betas and Standard Errors from Ordinary Least Squares Regression Models Predicting Women's Fertility (Number of Births) in 2012, Married Women Ages 15 to 49 at Wave II, 2006 and 2012 Egyptian Labor Market Panel Survey N=3,749

Key Variables	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6	
	b	(SE)	b	(SE)	b	(SE)	b	(SE)	b	(SE)	b	(SE)
Individual Household Decision-Making	0.020*	(0.0093)	-	-	-	-	-	-	-	-	-	-
Joint Household Decision-Making	-	-	0.012	(0.0075)	-	-	-	-	-	-	-	-
Mobility	-	-	-	-	0.10***	(0.030)	-	-	-	-	-	-
Financial Autonomy	-	-	-	-	-	-	-0.019	(0.051)	-	-	-	-
Gender Attitudes	-	-	-	-	-	-	-	-	-0.16***	(0.036)	-	-
Domestic Violence Attitudes	-	-	-	-	-	-	-	-	-	-	0.018	(0.0098)
Age (yrs)	0.076***	(0.0051)	0.077***	(0.0051)	0.075***	(0.0051)	0.077***	(0.0051)	0.078***	(0.0051)	0.077***	(0.0051)
Education (Ref=Primary)												
None	0.056	(0.078)	0.059	(0.078)	0.058	(0.078)	0.055	(0.078)	0.056	(0.078)	0.055	(0.078)
Preparatory	0.022	(0.11)	0.027	(0.11)	0.018	(0.11)	0.027	(0.11)	0.040	(0.11)	0.024	(0.11)
Secondary	-0.086	(0.080)	-0.084	(0.080)	-0.092	(0.080)	-0.083	(0.080)	-0.055	(0.080)	-0.079	(0.080)
Intermediate or Higher	-0.15	(0.10)	-0.15	(0.10)	-0.15	(0.10)	-0.15	(0.10)	-0.11	(0.10)	-0.14	(0.10)
Mother's Education (Ref=Primary)												
None	-0.17	(0.23)	-0.17	(0.23)	-0.15	(0.23)	-0.17	(0.23)	-0.14	(0.23)	-0.16	(0.23)
Preparatory or Higher	-0.076	(0.055)	-0.086	(0.055)	-0.066	(0.055)	-0.081	(0.055)	-0.082	(0.055)	-0.081	(0.055)
Older than 18 at First Marriage	-0.58***	(0.052)	-0.59***	(0.052)	-0.58***	(0.052)	-0.59***	(0.052)	-0.59***	(0.052)	-0.59***	(0.052)
Dowry (Ref=None)												
No Response	0.11*	(0.051)	0.12*	(0.051)	0.11*	(0.051)	0.11*	(0.051)	0.13*	(0.051)	0.11*	(0.051)
Some	0.16**	(0.047)	0.16***	(0.047)	0.16***	(0.047)	0.16***	(0.047)	0.15**	(0.047)	0.16***	(0.047)
Marriage Process Duration (Months)	-0.00096	(0.0015)	-0.0010	(0.0015)	-0.00094	(0.0015)	-0.00097	(0.0015)	-0.0010	(0.0015)	-0.0010	(0.0015)
Related to Husband	0.072	(0.043)	0.069	(0.043)	0.076	(0.043)	0.070	(0.043)	0.064	(0.043)	0.071	(0.043)
Ever Worked	0.022	(0.080)	0.025	(0.080)	0.014	(0.080)	0.029	(0.080)	0.029	(0.080)	0.028	(0.080)
Employment (Ref=Employed)												
Unemployed	0.14	(0.12)	0.14	(0.12)	0.15	(0.12)	0.14	(0.12)	0.16	(0.12)	0.14	(0.12)
Retired	0.17	(0.088)	0.17*	(0.088)	0.17*	(0.088)	0.17	(0.088)	0.16	(0.088)	0.17*	(0.088)
Birth Setting: Urban	-0.0040	(0.062)	-0.0032	(0.062)	-0.0041	(0.062)	-0.0022	(0.062)	-0.0077	(0.062)	-0.0027	(0.062)
Region (Ref=Greater Cairo)												
Alexandria & Suez Canal	-0.037	(0.097)	-0.056	(0.096)	-0.025	(0.097)	-0.053	(0.097)	-0.058	(0.096)	-0.041	(0.097)
Urban Lower	-0.010	(0.090)	0.0021	(0.090)	-0.00027	(0.090)	-0.0079	(0.090)	-0.017	(0.089)	-0.0097	(0.090)
Urban Upper	0.50***	(0.085)	0.48***	(0.085)	0.52***	(0.086)	0.47***	(0.085)	0.49***	(0.085)	0.47***	(0.085)
Rural Lower	0.074	(0.090)	0.086	(0.091)	0.086	(0.090)	0.078	(0.091)	0.065	(0.090)	0.072	(0.090)
Rural Upper	0.46***	(0.097)	0.45***	(0.096)	0.49***	(0.097)	0.44***	(0.096)	0.44***	(0.096)	0.43***	(0.096)
Household Wealth Index (Ref=Poorest)												
Poorer	-0.13*	(0.062)	-0.14*	(0.062)	-0.13*	(0.062)	-0.13*	(0.062)	-0.13*	(0.062)	-0.13*	(0.062)
Middle	-0.21**	(0.066)	-0.22**	(0.066)	-0.20**	(0.066)	-0.21**	(0.066)	-0.20**	(0.066)	-0.21**	(0.066)
Richer	-0.19*	(0.073)	-0.20**	(0.073)	-0.18*	(0.073)	-0.19**	(0.074)	-0.19*	(0.073)	-0.19*	(0.074)
Richest	-0.33***	(0.084)	-0.35***	(0.084)	-0.33***	(0.084)	-0.34***	(0.084)	-0.34***	(0.083)	-0.33***	(0.084)
Household Size	0.12***	(0.0078)	0.11***	(0.0078)	0.12***	(0.0078)	0.11***	(0.0078)	0.11***	(0.0077)	0.11***	(0.0078)
Husband's Age (yrs)	-0.0024	(0.0042)	-0.0021	(0.0042)	-0.0020	(0.0042)	-0.0023	(0.0042)	-0.0029	(0.0042)	-0.0025	(0.0042)
Husband's Education (Ref=Primary)												
None	0.013	(0.067)	0.012	(0.067)	0.012	(0.067)	0.012	(0.067)	0.019	(0.067)	0.0058	(0.067)
Preparatory	0.040	(0.10)	0.041	(0.10)	0.046	(0.10)	0.040	(0.10)	0.056	(0.10)	0.046	(0.10)
Secondary	-0.022	(0.069)	-0.021	(0.069)	-0.014	(0.069)	-0.022	(0.069)	-0.0099	(0.069)	-0.020	(0.069)
Intermediate or Higher	0.067	(0.083)	0.060	(0.083)	0.072	(0.083)	0.063	(0.083)	0.075	(0.083)	0.066	(0.083)
Husband's Employment (Ref=Employed)												
Unemployed	-0.096	(0.21)	-0.097	(0.21)	-0.12	(0.21)	-0.091	(0.21)	-0.086	(0.21)	-0.080	(0.21)

Out of Labor Force	-0.28*	(0.13)	-0.28*	(0.13)	-0.29*	(0.13)	-0.28*	(0.13)	-0.26*	(0.13)	-0.28*	(0.13)
Husband's Migration (Ref=No)												
No Response	-0.11	(0.066)	-0.11	(0.066)	-0.11	(0.066)	-0.11	(0.066)	-0.11	(0.066)	-0.11	(0.066)
Yes	0.033	(0.081)	0.037	(0.081)	0.033	(0.081)	0.037	(0.081)	0.030	(0.081)	0.035	(0.081)
Observations	3749		3749		3749		3749		3749		3749	
R-squared	0.341		0.341		0.343		0.341		0.344		0.341	
BIC	12105.3		12107.5		12097.9		12110.0		12090.2		12106.7	
F	53.4		53.4		53.8		53.3		54.1		53.4	
df_m	36		36		36		36		36		36	
df_r	3711		3711		3711		3711		3711		3711	

Notes: *p<0.05, ** p<0.01, *** p<0.001. Standard errors in parentheses

Table 6L.14 Betas and Standard Errors from Ordinary Least Squares Regression Models Predicting Women's Fertility (Number of Births) in 2012, Married Women Ages 15 to 49 at Wave II, 2006 and 2012 Egyptian Labor Market Panel Survey N=3,749

Key Variables	Model 7		Model 8	
	b	(SE)	b	(SE)
Individual Household Decision-Making	0.032**	(0.010)	0.025*	(0.011)
Joint Household Decision-Making	0.023**	(0.0082)	0.025**	(0.0082)
Mobility	-	-	0.099**	(0.033)
Financial Autonomy	-	-	-0.011	(0.051)
Gender Attitudes	-	-	-0.17***	(0.036)
Domestic Violence Attitudes	-	-	0.017	(0.0099)
Age (yrs)	0.074***	(0.0052)	0.074***	(0.0051)
Education (Ref=Primary)				
None	0.062	(0.078)	0.065	(0.078)
Preparatory	0.022	(0.11)	0.029	(0.11)
Secondary	-0.086	(0.080)	-0.056	(0.080)
Intermediate or Higher	-0.15	(0.10)	-0.097	(0.10)
Mother's Education (Ref=Primary)				
None	-0.18	(0.23)	-0.12	(0.23)
Preparatory or Higher	-0.083	(0.055)	-0.073	(0.055)
Older than 18 at First Marriage	-0.58***	(0.052)	-0.58***	(0.052)
Dowry (Ref=None)				
No Response	0.10*	(0.051)	0.11*	(0.051)
Some	0.16***	(0.047)	0.14**	(0.047)
Marriage Process Duration (Months)	-0.0011	(0.0015)	-0.0012	(0.0015)
Related to Husband	0.072	(0.043)	0.071	(0.043)
Ever Worked	0.013	(0.080)	0.0027	(0.080)
Employment (Ref=Employed)				
Unemployed	0.14	(0.12)	0.15	(0.12)
Retired	0.17	(0.088)	0.17	(0.088)
Birth Setting: Urban	-0.0063	(0.062)	-0.013	(0.061)
Region (Ref=Greater Cairo)				
Alexandria & Suez Canal	-0.030	(0.097)	-0.0019	(0.097)
Urban Lower	0.012	(0.090)	0.016	(0.090)
Urban Upper	0.52***	(0.086)	0.57***	(0.086)
Rural Lower	0.092	(0.091)	0.091	(0.090)
Rural Upper	0.49***	(0.097)	0.52***	(0.097)
Household Wealth Index (Ref=Poorest)				
Poorer	-0.13*	(0.062)	-0.12	(0.062)
Middle	-0.21**	(0.066)	-0.18**	(0.066)
Richer	-0.19**	(0.073)	-0.16*	(0.074)
Richest	-0.34***	(0.084)	-0.32***	(0.084)
Household Size	0.12***	(0.0078)	0.12***	(0.0078)
Husband's Age (yrs)	-0.0019	(0.0042)	-0.0022	(0.0042)
Husband's Education (Ref=Primary)				
None	0.013	(0.067)	0.014	(0.067)
Preparatory	0.039	(0.10)	0.065	(0.10)
Secondary	-0.020	(0.069)	0.00044	(0.068)
Intermediate or Higher	0.064	(0.083)	0.087	(0.083)
Husband's Employment (Ref=Employed)				
Unemployed	-0.11	(0.21)	-0.11	(0.21)
Out of Labor Force	-0.28*	(0.13)	-0.27*	(0.13)
Husband's Migration (Ref=No)				
No Response	-0.11	(0.066)	-0.12	(0.065)
Yes	0.031	(0.081)	0.021	(0.081)
Observations	3749		3749	
R-squared	0.343		0.349	
BIC	12105.8		12103.4	
F	52.3		48.5	
df_m	37		41	
df_r	3710		3706	

Notes: *p<0.05, ** p<0.01, *** p<0.001. Standard errors in parentheses

Table 6L.15 Betas and Standard Errors from OLS Regression Models Predicting Women's Fertility (Number of Births) in 2012, Women Ages 15 to 49 at Wave II and Ever Married by Wave III, 2006 and 2012 Egyptian Labor Market Panel Survey

Key Variables	Model 1		Model 2		Model 3		Model 4		Model 5	
	b	(SE)	b	(SE)	b	(SE)	b	(SE)	b	(SE)
Individual Household Decision-Making	0.021**	(0.0072)	-	-	-	-	-	-	-	-
Joint Household Decision-Making	-	-	0.0072	(0.0062)	-	-	-	-	-	-
Mobility	-	-	-	-	0.11***	(0.023)	-	-	-	-
Financial Autonomy	-	-	-	-	-	-	-0.015	(0.043)	-	-
Gender Attitudes	-	-	-	-	-	-	-	-	-0.098***	(0.029)
Age (yrs)	0.077***	(0.0042)	0.079***	(0.0041)	0.077***	(0.0041)	0.079***	(0.0041)	0.079***	(0.0041)
Education (Ref=Primary)										
None	0.095	(0.064)	0.096	(0.064)	0.092	(0.063)	0.094	(0.064)	0.092	(0.064)
Preparatory	-0.040	(0.078)	-0.038	(0.078)	-0.041	(0.078)	-0.036	(0.078)	-0.027	(0.078)
Secondary	-0.099	(0.063)	-0.10	(0.063)	-0.10	(0.063)	-0.10	(0.063)	-0.083	(0.063)
Intermediate or Higher	-0.20**	(0.077)	-0.22**	(0.077)	-0.21**	(0.077)	-0.21**	(0.077)	-0.18*	(0.077)
Mother's Education (Ref=Primary)										
None	0.0041	(0.16)	0.0078	(0.16)	0.020	(0.16)	0.0050	(0.16)	0.016	(0.16)
Preparatory or Higher	-0.032	(0.043)	-0.038	(0.043)	-0.023	(0.043)	-0.037	(0.043)	-0.038	(0.043)
Married in 2012	0.75***	(0.071)	0.71***	(0.071)	0.74***	(0.070)	0.72***	(0.070)	0.71***	(0.070)
Older than 18 at First Marriage (2012)	-0.61***	(0.043)	-0.62***	(0.043)	-0.61***	(0.043)	-0.61***	(0.043)	-0.61***	(0.043)
Dowry (Ref=None) (2012)										
No Response	-0.14*	(0.056)	-0.15**	(0.056)	-0.15**	(0.056)	-0.15**	(0.056)	-0.14*	(0.056)
Some	-0.085	(0.044)	-0.085	(0.044)	-0.083	(0.044)	-0.085	(0.044)	-0.084	(0.044)
Marriage Process Duration (Months) (2012)	0.0046**	(0.0015)	0.0046**	(0.0015)	0.0045**	(0.0015)	0.0046**	(0.0015)	0.0045**	(0.0015)
Married btw 2006 and 2012	-0.94***	(0.050)	-0.94***	(0.052)	-0.90***	(0.051)	-0.96***	(0.050)	-0.94***	(0.050)
Related to Husband (Ref=No) (2012)										
No Response	0.13	(0.078)	0.13	(0.079)	0.13	(0.078)	0.13	(0.079)	0.12	(0.078)
Yes	-0.018	(0.042)	-0.018	(0.042)	-0.019	(0.042)	-0.018	(0.042)	-0.018	(0.042)
Ever Worked	0.0021	(0.069)	0.0088	(0.069)	-0.0087	(0.069)	0.0099	(0.069)	0.011	(0.069)
Employment (Ref=Employed)										
Unemployed	0.031	(0.093)	0.035	(0.093)	0.030	(0.092)	0.033	(0.093)	0.039	(0.093)
Retired	0.062	(0.075)	0.062	(0.075)	0.058	(0.075)	0.061	(0.075)	0.057	(0.075)
Birth Setting: Urban	0.043	(0.053)	0.043	(0.053)	0.043	(0.053)	0.043	(0.053)	0.039	(0.053)
Region (Ref=Greater Cairo)										
Alexandria & Suez Canal	-0.045	(0.077)	-0.057	(0.077)	-0.031	(0.077)	-0.055	(0.077)	-0.060	(0.077)
Urban Lower	0.042	(0.069)	0.054	(0.069)	0.053	(0.069)	0.049	(0.069)	0.043	(0.069)
Urban Upper	0.48***	(0.067)	0.46***	(0.067)	0.50***	(0.068)	0.46***	(0.067)	0.47***	(0.067)
Rural Lower	0.14	(0.073)	0.15*	(0.073)	0.16*	(0.073)	0.15*	(0.073)	0.13	(0.073)
Rural Upper	0.49***	(0.078)	0.47***	(0.078)	0.51***	(0.079)	0.47***	(0.078)	0.47***	(0.078)
Household Wealth Index (Ref=Poorest)										
Poorer	-0.070	(0.049)	-0.073	(0.049)	-0.068	(0.049)	-0.072	(0.049)	-0.073	(0.049)
Middle	-0.16**	(0.052)	-0.17**	(0.052)	-0.16**	(0.052)	-0.16**	(0.052)	-0.16**	(0.052)
Richer	-0.14*	(0.057)	-0.15**	(0.057)	-0.14*	(0.057)	-0.15*	(0.058)	-0.15**	(0.057)
Richest	-0.27***	(0.064)	-0.27***	(0.064)	-0.26***	(0.064)	-0.27***	(0.065)	-0.27***	(0.064)
Household Size	0.098***	(0.0063)	0.095***	(0.0063)	0.097***	(0.0063)	0.095***	(0.0063)	0.096***	(0.0063)
Observations	5211		5211		5211		5211		5211	
R-squared	0.462		0.461		0.463		0.461		0.462	
BIC	16166.7		16173.9		16152.4		16175.2		16164.2	

Notes: *p<0.05, ** p<0.01, *** p<0.001. Standard errors in parentheses

Table 6L.16 Betas and Standard Errors from OLS Regression Models Predicting Women's Fertility (Number of Births) in 2012, Women Ages 15 to 49 at Wave II and Ever Married by Wave III, 2006 and 2012 Egyptian Labor Market Panel Survey

Key Variables	Model 6		Model 7	
	b	(SE)	b	(SE)
Individual Household Decision-Making	0.030***	(0.0080)	0.018*	(0.0088)
Joint Household Decision-Making	0.018**	(0.0069)	0.019**	(0.0068)
Mobility	-	-	0.10***	(0.026)
Financial Autonomy	-	-	-0.023	(0.043)
Gender Attitudes	-	-	-0.11***	(0.029)
Age (yrs)	0.076***	(0.0042)	0.076***	(0.0042)
Education (Ref=Primary)				
None	0.10	(0.064)	0.096	(0.063)
Preparatory	-0.043	(0.078)	-0.033	(0.078)
Secondary	-0.10	(0.063)	-0.081	(0.063)
Intermediate or Higher	-0.21**	(0.077)	-0.17*	(0.077)
Mother's Education (Ref=Primary)				
None	0.0089	(0.16)	0.034	(0.16)
Preparatory or Higher	-0.035	(0.043)	-0.027	(0.043)
Married in 2012	0.73***	(0.071)	0.72***	(0.071)
Older than 18 at First Marriage (2012)	-0.61***	(0.043)	-0.61***	(0.043)
Dowry (Ref=None) (2012)				
No Response	-0.15**	(0.056)	-0.14*	(0.056)
Some	-0.086	(0.044)	-0.082	(0.044)
Marriage Process Duration (Months) (2012)	0.0046**	(0.0015)	0.0045**	(0.0015)
Married btw 2006 and 2012	-0.89***	(0.054)	-0.83***	(0.055)
Related to Husband (Ref=No) (2012)				
No Response	0.13	(0.078)	0.12	(0.078)
Yes	-0.018	(0.042)	-0.019	(0.041)
Ever Worked	-0.0025	(0.069)	-0.013	(0.069)
Employment (Ref=Employed)				
Unemployed	0.028	(0.093)	0.026	(0.093)
Retired	0.062	(0.075)	0.052	(0.075)
Birth Setting: Urban	0.043	(0.053)	0.039	(0.053)
Region (Ref=Greater Cairo)				
Alexandria & Suez Canal	-0.043	(0.077)	-0.032	(0.077)
Urban Lower	0.054	(0.069)	0.059	(0.069)
Urban Upper	0.49***	(0.067)	0.52***	(0.068)
Rural Lower	0.15*	(0.073)	0.16*	(0.073)
Rural Upper	0.50***	(0.079)	0.53***	(0.079)
Household Wealth Index (Ref=Poorest)				
Poorer	-0.070	(0.049)	-0.066	(0.049)
Middle	-0.16**	(0.052)	-0.15**	(0.052)
Richer	-0.14*	(0.057)	-0.13*	(0.057)

Richest	-0.27***	(0.064)	-0.26***	(0.065)
Household Size	0.098***	(0.0063)	0.099***	(0.0063)
Observations	5211		5211	
R-squared	0.462		0.465	
BIC	16168.2		16164.7	

Notes: *p<0.05, ** p<0.01, *** p<0.001. Standard errors in parentheses

Table 6L.17 Odds Ratios and Standard Errors from Multi Level Logistic Regression Models Predicting Women's Fertility (Ever Given Birth) in 2012, Married Women Ages 15 to 49 at Wave II, 2006 and 2012 Egyptian Labor Market Panel Survey

Key Variables	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6	
	OR	(SE)	OR	(SE)	OR	(SE)	OR	(SE)	OR	(SE)	OR	(SE)
Individual Household Decision-Making	1.36***	(0.098)	-	-	-	-	-	-	-	-	-	-
Joint Household Decision-Making	-	-	1.23***	(0.064)	-	-	-	-	-	-	-	-
Mobility	-	-	-	-	2.78***	(0.54)	-	-	-	-	-	-
Financial Autonomy	-	-	-	-	-	-	0.93	(0.25)	-	-	-	-
Gender Attitudes	-	-	-	-	-	-	-	-	1.33	(0.26)	-	-
Domestic Violence Attitudes	-	-	-	-	-	-	-	-	-	-	1.05	(0.061)
Age (yrs)	0.96	(0.025)	0.97	(0.025)	0.96	(0.025)	0.97	(0.025)	0.96	(0.025)	0.97	(0.025)
Education (Ref=Primary)												
None	1.34	(0.52)	1.43	(0.56)	1.39	(0.54)	1.36	(0.52)	1.38	(0.53)	1.37	(0.53)
Preparatory	1.39	(0.77)	1.41	(0.77)	1.35	(0.75)	1.36	(0.74)	1.36	(0.74)	1.35	(0.73)
Secondary	2.42*	(0.98)	2.45*	(0.99)	2.38*	(0.98)	2.44*	(0.99)	2.31*	(0.93)	2.47*	(1.00)
Intermediate or Higher	6.36**	(3.86)	6.67**	(4.04)	6.65**	(4.06)	6.65**	(4.00)	6.04**	(3.63)	6.78**	(4.08)
Mother's Education (Ref=Primary)												
None	0.26	(0.22)	0.28	(0.25)	0.32	(0.28)	0.28	(0.24)	0.27	(0.24)	0.28	(0.24)
Preparatory or Higher	1.09	(0.35)	0.98	(0.32)	1.16	(0.38)	1.03	(0.33)	1.04	(0.33)	1.03	(0.33)
Older than 18 at First Marriage	0.82	(0.25)	0.88	(0.27)	0.75	(0.23)	0.83	(0.25)	0.85	(0.26)	0.83	(0.25)
Dowry (Ref=None)												
No Response	0.71	(0.20)	0.73	(0.21)	0.69	(0.20)	0.76	(0.21)	0.76	(0.21)	0.76	(0.21)
Some	1.11	(0.30)	1.16	(0.32)	1.11	(0.31)	1.11	(0.30)	1.15	(0.31)	1.12	(0.30)
Marriage Process Duration (Months)	1.01	(0.0088)	1.01	(0.0090)	1.01	(0.0090)	1.01	(0.0089)	1.01	(0.0089)	1.01	(0.0089)
Related to Husband	0.70	(0.16)	0.65	(0.15)	0.71	(0.17)	0.66	(0.15)	0.66	(0.15)	0.67	(0.16)
Ever Worked	1.34	(0.66)	1.33	(0.65)	1.29	(0.64)	1.42	(0.68)	1.41	(0.68)	1.41	(0.68)
Employment (Ref=Employed)												
Unemployed	2.52	(1.98)	2.31	(1.79)	2.76	(2.20)	2.41	(1.87)	2.38	(1.85)	2.42	(1.88)
Retired	1.83	(0.98)	1.80	(0.97)	1.94	(1.04)	1.79	(0.96)	1.86	(0.99)	1.80	(0.96)
Birth Setting: Urban	0.81	(0.28)	0.78	(0.28)	0.78	(0.26)	0.83	(0.28)	0.83	(0.28)	0.83	(0.29)

Region (Ref=Greater Cairo)												
Alexandria & Suez Canal	2.28	(1.26)	1.76	(0.97)	2.44	(1.36)	1.83	(1.00)	1.83	(1.00)	1.89	(1.04)
Urban Lower	1.17	(0.57)	1.46	(0.71)	1.25	(0.61)	1.23	(0.59)	1.25	(0.60)	1.23	(0.59)
Urban Upper	1.42	(0.64)	1.13	(0.50)	1.58	(0.72)	1.04	(0.46)	1.02	(0.45)	1.04	(0.46)
Rural Lower	0.78	(0.37)	0.90	(0.44)	0.82	(0.39)	0.79	(0.38)	0.80	(0.38)	0.78	(0.37)
Rural Upper	0.80	(0.41)	0.73	(0.38)	0.89	(0.45)	0.65	(0.33)	0.65	(0.33)	0.64	(0.32)
Household Wealth Index (Ref=Poorest)												
Poorer	0.74	(0.27)	0.68	(0.25)	0.80	(0.29)	0.72	(0.26)	0.72	(0.26)	0.72	(0.26)
Middle	0.63	(0.24)	0.57	(0.21)	0.68	(0.26)	0.61	(0.23)	0.59	(0.22)	0.61	(0.23)
Richer	1.00	(0.46)	0.80	(0.37)	1.06	(0.49)	0.94	(0.43)	0.90	(0.41)	0.94	(0.43)
Richest	0.44	(0.21)	0.32*	(0.15)	0.42	(0.20)	0.39*	(0.19)	0.39*	(0.18)	0.39*	(0.19)
Household Size	2.26***	(0.20)	2.27***	(0.21)	2.10***	(0.19)	2.37***	(0.22)	2.39***	(0.22)	2.35***	(0.22)
Husband's Age (yrs)	0.97	(0.019)	0.98	(0.020)	0.98	(0.020)	0.97	(0.019)	0.98	(0.019)	0.98	(0.019)
Husband's Education (Ref=Primary)												
None	0.59	(0.23)	0.56	(0.22)	0.62	(0.24)	0.59	(0.23)	0.59	(0.23)	0.58	(0.22)
Preparatory	0.76	(0.42)	0.86	(0.48)	0.99	(0.55)	0.87	(0.48)	0.84	(0.46)	0.88	(0.49)
Secondary	0.85	(0.34)	0.81	(0.33)	0.96	(0.39)	0.85	(0.34)	0.85	(0.34)	0.86	(0.35)
Intermediate or Higher	1.09	(0.56)	0.95	(0.48)	1.22	(0.63)	1.04	(0.53)	1.04	(0.53)	1.04	(0.53)
Husband's Employment (Ref=Employed)												
Unemployed	0.16*	(0.13)	0.14*	(0.12)	0.11**	(0.088)	0.16*	(0.13)	0.17*	(0.13)	0.17*	(0.13)
Out of Labor Force	3.16	(3.39)	2.59	(2.70)	2.91	(3.11)	2.80	(2.94)	2.62	(2.76)	2.67	(2.81)
Husband's Migration (Ref=No)												
No Response	0.89	(0.30)	0.85	(0.29)	0.82	(0.28)	0.84	(0.28)	0.85	(0.28)	0.85	(0.28)
Yes	1.27	(0.64)	1.16	(0.58)	1.28	(0.64)	1.21	(0.60)	1.19	(0.59)	1.22	(0.60)
Observations	3845		3845		3845		3845		3845		3845	
BIC	1037.3		1041.9		1029.0		1059.0		1057.0		1058.3	
Variance at Level 1 (Individual Level)	1.15		1.15		1.15		1.15		1.15		1.15	
Variance at Level 2 (PSU Level)	0.261		0.259		0.259		0.259		0.251		0.259	
ICC	0.05		0.05		0.05		0.05		0.05		0.05	

Notes: *p<0.05, ** p<0.01, *** p<0.001. Standard errors in parentheses

Table 6L.18 Odds Ratios and Standard Errors from Multi Level Logistic Regression Models Predicting Women's Fertility (Ever Given Birth) in 2012, Married Women Ages 15 to 49 at Wave II, 2006 and 2012 Egyptian Labor Market Panel Survey

Key Variables	Model 7		Model 8	
	OR	(SE)	OR	(SE)
Individual Household Decision-Making	1.49***	(0.11)	1.37***	(0.11)
Joint Household Decision-Making	1.33***	(0.068)	1.35***	(0.073)
Mobility	-	-	2.17***	(0.45)
Financial Autonomy	-	-	0.90	(0.26)
Gender Attitudes	-	-	1.19	(0.25)
Domestic Violence Attitudes	-	-	1.11	(0.067)
Age (yrs)	0.95	(0.025)	0.95	(0.026)
Education (Ref=Primary)				
None	1.40	(0.56)	1.43	(0.57)
Preparatory	1.44	(0.81)	1.34	(0.77)
Secondary	2.43*	(1.01)	2.34*	(0.99)
Intermediate or Higher	6.59**	(4.11)	6.84**	(4.32)
Mother's Education (Ref=Primary)				
None	0.25	(0.23)	0.28	(0.26)
Preparatory or Higher	1.02	(0.34)	1.09	(0.37)
Older than 18 at First Marriage	0.89	(0.27)	0.86	(0.27)
Dowry (Ref=None)				
No Response	0.61	(0.17)	0.57	(0.17)
Some	1.11	(0.31)	1.13	(0.32)
Marriage Process Duration (Months)	1.01	(0.0088)	1.01	(0.0089)
Related to Husband	0.69	(0.17)	0.74	(0.18)
Ever Worked	1.13	(0.56)	1.10	(0.56)
Employment (Ref=Employed)				
Unemployed	2.07	(1.65)	2.13	(1.73)
Retired	1.74	(0.96)	1.93	(1.07)
Birth Setting: Urban	0.70	(0.25)	0.63	(0.23)
Region (Ref=Greater Cairo)				
Alexandria & Suez Canal	2.47	(1.41)	2.96	(1.72)
Urban Lower	1.60	(0.80)	1.62	(0.83)
Urban Upper	1.99	(0.94)	2.37	(1.14)
Rural Lower	0.98	(0.48)	0.93	(0.46)
Rural Upper	1.13	(0.60)	1.22	(0.65)
Household Wealth Index (Ref=Poorest)				
Poorer	0.70	(0.26)	0.73	(0.27)
Middle	0.58	(0.22)	0.62	(0.24)
Richer	0.85	(0.38)	0.88	(0.41)
Richest	0.36*	(0.17)	0.37*	(0.18)
Household Size	2.11***	(0.18)	1.93***	(0.16)
Husband's Age (yrs)	0.98	(0.020)	0.99	(0.021)
Husband's Education (Ref=Primary)				
None	0.56	(0.22)	0.54	(0.22)
Preparatory	0.70	(0.39)	0.80	(0.45)
Secondary	0.77	(0.32)	0.84	(0.35)
Intermediate or Higher	0.98	(0.51)	1.09	(0.58)
Husband's Employment (Ref=Employed)				
Unemployed	0.12*	(0.10)	0.092**	(0.076)
Out of Labor Force	2.88	(3.06)	2.75	(2.95)
Husband's Migration (Ref=No)				
No Response	0.94	(0.33)	0.90	(0.33)
Yes	1.24	(0.63)	1.33	(0.69)
Observations	3845		3845	
BIC	1011.1		1025.6	
Variance at Level 1 (Individual Level)	1.15		1.14	
Variance at Level 2 (PSU Level)	0.262		0.251	
ICC	0.05		0.05	

Notes: *p<0.05, ** p<0.01, *** p<0.001. Standard errors in parentheses

Table 6L.19 Odds Ratios and Standard Errors from Logistic Regression Models Predicting Women's Fertility (Ever Given Birth) in 2012, Women Ages 15 to 49 at Wave II and Ever Married by Wave III, 2006 and 2012 Egyptian Labor Market Panel Survey

Key Variables	Model 1		Model 2		Model 3		Model 4		Model 5	
	OR	(SE)	OR	(SE)	OR	(SE)	OR	(SE)	OR	(SE)
Individual Household Decision-Making	1.27***	(0.053)	-	-	-	-	-	-	-	-
Joint Household Decision-Making	-	-	1.03	(0.026)	-	-	-	-	-	-
Mobility	-	-	-	-	1.98***	(0.19)	-	-	-	-
Financial Autonomy	-	-	-	-	-	-	1.06	(0.19)	-	-
Gender Attitudes	-	-	-	-	-	-	-	-	0.93	(0.097)
Age (yrs)	0.98	(0.016)	1.00	(0.016)	0.99	(0.016)	1.00	(0.016)	1.00	(0.016)
Education (Ref=Primary)										
None	0.97	(0.22)	0.93	(0.21)	0.92	(0.21)	0.92	(0.21)	0.91	(0.20)
Preparatory	1.05	(0.25)	1.02	(0.24)	1.04	(0.25)	1.02	(0.24)	1.02	(0.24)
Secondary	2.06***	(0.45)	1.93**	(0.42)	2.02**	(0.44)	1.94**	(0.42)	1.97**	(0.43)
Intermediate or Higher	2.58***	(0.72)	2.36**	(0.66)	2.40**	(0.67)	2.38**	(0.66)	2.44**	(0.68)
Mother's Education (Ref=Primary)										
None	0.45*	(0.16)	0.49*	(0.17)	0.50*	(0.17)	0.48*	(0.17)	0.48*	(0.17)
Preparatory or Higher	0.95	(0.14)	0.94	(0.14)	0.97	(0.14)	0.94	(0.14)	0.94	(0.14)
Married in 2012	2.97***	(0.64)	2.76***	(0.59)	2.79***	(0.61)	2.82***	(0.60)	2.80***	(0.60)
Older than 18 at First Marriage (2012)	0.36***	(0.081)	0.37***	(0.082)	0.37***	(0.083)	0.36***	(0.082)	0.37***	(0.082)
Dowry (Ref=None) (2012)										
No Response	0.83	(0.15)	0.82	(0.14)	0.83	(0.15)	0.82	(0.14)	0.83	(0.15)
Some	1.07	(0.16)	1.06	(0.16)	1.07	(0.16)	1.06	(0.16)	1.06	(0.16)
Marriage Process Duration (Months) (2012)	1.01	(0.0054)	1.01	(0.0054)	1.01	(0.0054)	1.01	(0.0054)	1.01	(0.0054)
Married btw 2006 and 2012	0.11***	(0.018)	0.100***	(0.017)	0.13***	(0.021)	0.094***	(0.015)	0.094***	(0.016)
Related to Husband (Ref=No) (2012)										
No Response	1.09	(0.33)	1.06	(0.32)	1.08	(0.33)	1.07	(0.32)	1.07	(0.32)
Yes	1.19	(0.17)	1.18	(0.17)	1.17	(0.17)	1.18	(0.17)	1.18	(0.17)
Ever Worked	1.33	(0.44)	1.41	(0.47)	1.26	(0.42)	1.41	(0.47)	1.42	(0.47)
Employment (Ref=Employed)										
Unemployed	1.52	(0.58)	1.51	(0.57)	1.44	(0.55)	1.53	(0.58)	1.53	(0.58)
Retired	1.58	(0.55)	1.58	(0.55)	1.50	(0.52)	1.58	(0.55)	1.58	(0.55)
Birth Setting: Urban	0.65	(0.15)	0.67	(0.15)	0.68	(0.15)	0.67	(0.15)	0.67	(0.15)
Region (Ref=Greater Cairo)										
Alexandria & Suez Canal	1.04	(0.27)	0.91	(0.23)	1.04	(0.27)	0.92	(0.23)	0.92	(0.23)
Urban Lower	1.18	(0.28)	1.20	(0.29)	1.22	(0.29)	1.19	(0.28)	1.18	(0.28)
Urban Upper	0.92	(0.21)	0.80	(0.18)	0.96	(0.22)	0.81	(0.18)	0.81	(0.18)
Rural Lower	0.86	(0.25)	0.88	(0.25)	0.95	(0.27)	0.87	(0.25)	0.86	(0.25)
Rural Upper	0.64	(0.19)	0.57	(0.17)	0.72	(0.22)	0.57	(0.17)	0.57	(0.17)
Household Wealth Index (Ref=Poorest)										
Poorer	0.88	(0.15)	0.87	(0.15)	0.88	(0.15)	0.86	(0.15)	0.86	(0.15)
Middle	0.88	(0.16)	0.88	(0.16)	0.90	(0.16)	0.87	(0.16)	0.87	(0.16)
Richer	0.94	(0.19)	0.91	(0.18)	0.92	(0.19)	0.90	(0.18)	0.91	(0.18)
Richest	0.92	(0.20)	0.87	(0.19)	0.94	(0.21)	0.87	(0.19)	0.87	(0.19)
Household Size	1.18***	(0.032)	1.17***	(0.032)	1.17***	(0.032)	1.17***	(0.032)	1.17***	(0.032)
Observations	5,643		5,643		5,643		5,643		5,643	
BIC	1085.9		1087.5		1059.2		1110.4		1108.1	

Variance at Level 1 (Individual Level)	1.15	1.15	1.15	1.15	1.15
Variance at Level 2 (PSU Level)	0.261	0.259	0.259	0.259	0.251
ICC	0.045	0.045	0.045	0.045	0.045

Notes: *p<0.05, ** p<0.01, *** p<0.001. Standard errors in parentheses

Table 6L.20 Odds Ratios and Standard Errors from Logistic Regression Models Predicting Women's Fertility (Ever Given Birth) in 2012, Women Ages 15 to 49 at Wave II and Ever Married by Wave III, 2006 and 2012 Egyptian Labor Market Panel Survey

Key Variables	Model 6		Model 7	
	OR	(SE)	OR	(SE)
Individual Household Decision-Making	1.30***	(0.055)	1.21***	(0.054)
Joint Household Decision-Making	1.07**	(0.027)	1.07**	(0.028)
Mobility	-	-	1.75***	(0.17)
Financial Autonomy	-	-	0.99	(0.18)
Gender Attitudes	-	-	0.89	(0.093)
Age (yrs)	0.99	(0.016)	0.98	(0.016)
Education (Ref=Primary)				
None	0.99	(0.22)	0.96	(0.22)
Preparatory	1.04	(0.25)	1.06	(0.25)
Secondary	2.04**	(0.44)	2.10***	(0.46)
Intermediate or Higher	2.52***	(0.70)	2.55***	(0.72)
Mother's Education (Ref=Primary)				
None	0.46*	(0.16)	0.49*	(0.17)
Preparatory or Higher	0.96	(0.14)	0.98	(0.14)
Married in 2012	2.84***	(0.62)	2.72***	(0.60)
Older than 18 at First Marriage (2012)	0.36***	(0.081)	0.36***	(0.083)
Dowry (Ref=None) (2012)				
No Response	0.83	(0.15)	0.83	(0.15)
Some	1.06	(0.16)	1.07	(0.16)
Marriage Process Duration (Months) (2012)	1.01	(0.0054)	1.01	(0.0054)
Married btw 2006 and 2012	0.13***	(0.024)	0.17***	(0.030)
Related to Husband (Ref=No) (2012)				
No Response	1.06	(0.32)	1.04	(0.32)
Yes	1.20	(0.18)	1.19	(0.18)
Ever Worked	1.31	(0.44)	1.23	(0.41)
Employment (Ref=Employed)				
Unemployed	1.50	(0.57)	1.45	(0.55)
Retired	1.57	(0.55)	1.53	(0.54)
Birth Setting: Urban	0.65	(0.15)	0.66	(0.15)
Region (Ref=Greater Cairo)				
Alexandria & Suez Canal	1.02	(0.26)	1.08	(0.28)
Urban Lower	1.20	(0.29)	1.21	(0.29)
Urban Upper	0.91	(0.21)	1.01	(0.23)
Rural Lower	0.86	(0.25)	0.92	(0.27)
Rural Upper	0.63	(0.19)	0.74	(0.22)
Household Wealth Index (Ref=Poorest)				
Poorer	0.89	(0.15)	0.90	(0.15)
Middle	0.89	(0.16)	0.91	(0.17)
Richer	0.93	(0.19)	0.93	(0.19)
Richest	0.92	(0.20)	0.96	(0.21)
Household Size	1.18***	(0.032)	1.17***	(0.032)
Observations	5,643		5,643	
BIC	1109.6		1051.1	
Variance at Level 1 (Individual Level)	1.15		1.15	
Variance at Level 2 (PSU Level)	0.259		0.262	
ICC	0.045		0.045	

Notes: *p<0.05, ** p<0.01, *** p<0.001. Standard errors in parentheses

Table 6L.21 Betas and Standard Errors from Multi Level OLS Regression Models Predicting Women's Fertility (Number of Births) in 2012, Married Women Ages 15 to 49 at Wave II, 2006 and 2012 Egyptian Labor Market Panel Survey N=3,749

Key Variables	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6	
	b	(SE)	b	(SE)	b	(SE)	b	(SE)	b	(SE)	b	(SE)
Individual Household Decision-Making	0.024*	(0.0094)	-	-	-	-	-	-	-	-	-	-
Joint Household Decision-Making	-	-	0.011	(0.0075)	-	-	-	-	-	-	-	-
Mobility	-	-	-	-	0.11***	(0.031)	-	-	-	-	-	-
Financial Autonomy	-	-	-	-	-	-	-0.019	(0.051)	-	-	-	-
Gender Attitudes	-	-	-	-	-	-	-	-	-0.14***	(0.036)	-	-
Domestic Violence Attitudes	-	-	-	-	-	-	-	-	-	-	0.018	(0.0100)
Age (yrs)	0.075***	(0.0051)	0.076***	(0.0051)	0.074***	(0.0051)	0.076***	(0.0051)	0.077***	(0.0051)	0.076***	(0.0051)
Education (Ref=Primary)												
None	0.077	(0.078)	0.077	(0.078)	0.078	(0.078)	0.075	(0.078)	0.074	(0.078)	0.074	(0.078)
Preparatory	0.034	(0.11)	0.038	(0.11)	0.031	(0.10)	0.039	(0.11)	0.049	(0.10)	0.036	(0.11)
Secondary	-0.060	(0.079)	-0.059	(0.079)	-0.067	(0.079)	-0.058	(0.079)	-0.035	(0.079)	-0.054	(0.079)
Intermediate or Higher	-0.12	(0.099)	-0.12	(0.100)	-0.12	(0.099)	-0.11	(0.100)	-0.079	(0.100)	-0.11	(0.100)
Mother's Education (Ref=Primary)												
None	-0.13	(0.23)	-0.13	(0.23)	-0.11	(0.22)	-0.13	(0.23)	-0.11	(0.22)	-0.13	(0.23)
Preparatory or Higher	-0.082	(0.054)	-0.091	(0.054)	-0.071	(0.054)	-0.087	(0.054)	-0.088	(0.054)	-0.085	(0.054)
Older than 18 at First Marriage	-0.58***	(0.051)	-0.58***	(0.051)	-0.57***	(0.051)	-0.58***	(0.051)	-0.58***	(0.051)	-0.58***	(0.051)
Dowry (Ref=None)												
No Response	0.10	(0.056)	0.11*	(0.056)	0.10	(0.056)	0.11*	(0.056)	0.12*	(0.055)	0.11*	(0.056)
Some	0.15**	(0.049)	0.16**	(0.049)	0.15**	(0.049)	0.16**	(0.049)	0.14**	(0.049)	0.15**	(0.049)
Marriage Process Duration (Months)	-0.00058	(0.0015)	-0.00066	(0.0015)	-0.00056	(0.0015)	-0.00059	(0.0015)	-0.00063	(0.0015)	-0.00062	(0.0015)
Related to Husband	0.054	(0.043)	0.052	(0.043)	0.058	(0.043)	0.053	(0.043)	0.048	(0.043)	0.054	(0.043)
Ever Worked	0.0095	(0.080)	0.010	(0.080)	0.0045	(0.080)	0.015	(0.080)	0.018	(0.080)	0.014	(0.080)
Employment (Ref=Employed)												
Unemployed	0.17	(0.12)	0.17	(0.12)	0.18	(0.12)	0.17	(0.12)	0.19	(0.12)	0.17	(0.12)
Retired	0.17	(0.088)	0.16	(0.088)	0.17	(0.088)	0.16	(0.088)	0.16	(0.087)	0.17	(0.088)
Birth Setting: Urban	-0.016	(0.062)	-0.014	(0.062)	-0.015	(0.062)	-0.013	(0.062)	-0.016	(0.062)	-0.014	(0.062)
Region (Ref=Greater Cairo)												
Alexandria & Suez Canal	-0.028	(0.11)	-0.048	(0.11)	-0.018	(0.11)	-0.045	(0.11)	-0.050	(0.11)	-0.033	(0.11)
Urban Lower	-0.011	(0.10)	0.0038	(0.10)	0.00033	(0.10)	-0.0064	(0.10)	-0.015	(0.100)	-0.0083	(0.10)
Urban Upper	0.48***	(0.096)	0.46***	(0.095)	0.50***	(0.096)	0.46***	(0.095)	0.48***	(0.094)	0.46***	(0.095)
Rural Lower	0.068	(0.099)	0.082	(0.099)	0.082	(0.099)	0.073	(0.099)	0.063	(0.098)	0.067	(0.099)
Rural Upper	0.46***	(0.11)	0.44***	(0.11)	0.48***	(0.11)	0.43***	(0.11)	0.44***	(0.10)	0.43***	(0.11)
Household Wealth Index (Ref=Poorest)												
Poorer	-0.15*	(0.062)	-0.15*	(0.062)	-0.14*	(0.062)	-0.15*	(0.062)	-0.15*	(0.062)	-0.14*	(0.062)
Middle	-0.24***	(0.066)	-0.24***	(0.066)	-0.23***	(0.066)	-0.24***	(0.066)	-0.23***	(0.066)	-0.24***	(0.066)
Richer	-0.21**	(0.073)	-0.22**	(0.073)	-0.20**	(0.073)	-0.22**	(0.073)	-0.21**	(0.073)	-0.21**	(0.073)
Richest	-0.33***	(0.084)	-0.35***	(0.084)	-0.33***	(0.084)	-0.34***	(0.085)	-0.34***	(0.084)	-0.33***	(0.084)
Household Size	0.12***	(0.0078)	0.12***	(0.0078)	0.12***	(0.0078)	0.12***	(0.0078)	0.12***	(0.0078)	0.12***	(0.0078)
Husband's Age (yrs)	-0.0020	(0.0041)	-0.0018	(0.0041)	-0.0017	(0.0041)	-0.0020	(0.0041)	-0.0025	(0.0041)	-0.0021	(0.0041)
Husband's Education (Ref=Primary)												
None	0.0075	(0.067)	0.0075	(0.067)	0.0055	(0.067)	0.0073	(0.067)	0.014	(0.067)	0.0021	(0.067)
Preparatory	0.053	(0.10)	0.056	(0.10)	0.059	(0.10)	0.055	(0.10)	0.069	(0.10)	0.061	(0.10)
Secondary	-0.011	(0.068)	-0.012	(0.068)	-0.0037	(0.068)	-0.012	(0.068)	-0.0018	(0.068)	-0.0099	(0.068)
Intermediate or Higher	0.076	(0.082)	0.066	(0.082)	0.079	(0.082)	0.070	(0.082)	0.080	(0.082)	0.073	(0.082)
Husband's Employment (Ref=Employed)												
Unemployed	-0.12	(0.21)	-0.12	(0.21)	-0.14	(0.21)	-0.12	(0.21)	-0.11	(0.21)	-0.10	(0.21)

Out of Labor Force	-0.32*	(0.13)	-0.31*	(0.13)	-0.33*	(0.13)	-0.31*	(0.13)	-0.29*	(0.13)	-0.31*	(0.13)
Husband's Migration (Ref=No)												
No Response	-0.13*	(0.066)	-0.13	(0.066)	-0.13*	(0.066)	-0.13	(0.066)	-0.13*	(0.066)	-0.13	(0.066)
Yes	0.021	(0.082)	0.026	(0.082)	0.022	(0.082)	0.025	(0.082)	0.021	(0.081)	0.024	(0.082)
Observations	3749		3749		3749		3749		3749		3749	
BIC	12080.0		12084.2		12073.7		12086.4		12070.6		12083.2	
Variance at Level 1 (Individual Level)	1.15		1.15		1.15		1.15		1.15		1.15	
Variance at Level 2 (PSU Level)	0.261		0.259		0.259		0.259		0.251		0.259	
ICC	0.048		0.048		0.048		0.048		0.048		0.048	

Notes: *p<0.05, ** p<0.01, *** p<0.001. Standard errors in parentheses

Table 6L.22 Betas and Standard Errors from Multi Level OLS Regression Models Predicting Women's Fertility (Number of Births) in 2012, Married Women Ages 15 to 49 at Wave II, 2006 and 2012 Egyptian Labor Market Panel Survey N=3,749

Key Variables	Model 7		Model 8	
	b	(SE)	b	(SE)
Individual Household Decision-Making	0.036***	(0.010)	0.029**	(0.011)
Joint Household Decision-Making	0.023**	(0.0082)	0.025**	(0.0082)
Mobility	-	-	0.10**	(0.033)
Financial Autonomy	-	-	-0.013	(0.051)
Gender Attitudes	-	-	-0.16***	(0.036)
Domestic Violence Attitudes	-	-	0.018	(0.0100)
Age (yrs)	0.073***	(0.0051)	0.073***	(0.0051)
Education (Ref=Primary)				
None	0.083	(0.078)	0.084	(0.077)
Preparatory	0.033	(0.10)	0.038	(0.10)
Secondary	-0.061	(0.079)	-0.036	(0.079)
Intermediate or Higher	-0.12	(0.099)	-0.070	(0.100)
Mother's Education (Ref=Primary)				
None	-0.14	(0.22)	-0.090	(0.22)
Preparatory or Higher	-0.088	(0.054)	-0.077	(0.054)
Older than 18 at First Marriage	-0.57***	(0.051)	-0.57***	(0.051)
Dowry (Ref=None)				
No Response	0.10	(0.056)	0.10	(0.055)
Some	0.15**	(0.049)	0.13**	(0.049)
Marriage Process Duration (Months)	-0.00073	(0.0015)	-0.00082	(0.0015)
Related to Husband	0.053	(0.043)	0.053	(0.043)
Ever Worked	0.00036	(0.080)	-0.0022	(0.079)
Employment (Ref=Employed)				
Unemployed	0.16	(0.12)	0.17	(0.12)
Retired	0.17	(0.087)	0.16	(0.087)
Birth Setting: Urban	-0.018	(0.062)	-0.023	(0.061)
Region (Ref=Greater Cairo)				
Alexandria & Suez Canal	-0.022	(0.11)	0.0070	(0.11)
Urban Lower	0.012	(0.10)	0.017	(0.100)
Urban Upper	0.50***	(0.096)	0.56***	(0.096)
Rural Lower	0.087	(0.099)	0.088	(0.099)
Rural Upper	0.49***	(0.11)	0.52***	(0.11)
Household Wealth Index (Ref=Poorest)				
Poorer	-0.15*	(0.062)	-0.13*	(0.062)
Middle	-0.24***	(0.066)	-0.21**	(0.066)
Richer	-0.21**	(0.073)	-0.18*	(0.073)
Richest	-0.34***	(0.084)	-0.32***	(0.084)
Household Size	0.12***	(0.0078)	0.12***	(0.0078)
Husband's Age (yrs)	-0.0016	(0.0041)	-0.0019	(0.0041)
Husband's Education (Ref=Primary)				
None	0.0074	(0.067)	0.0070	(0.066)
Preparatory	0.053	(0.10)	0.076	(0.10)
Secondary	-0.011	(0.068)	0.0083	(0.068)
Intermediate or Higher	0.072	(0.082)	0.092	(0.082)
Husband's Employment (Ref=Employed)				
Unemployed	-0.13	(0.21)	-0.14	(0.21)
Out of Labor Force	-0.32*	(0.13)	-0.31*	(0.13)
Husband's Migration (Ref=No)				
No Response	-0.13*	(0.066)	-0.13*	(0.066)
Yes	0.019	(0.082)	0.011	(0.081)
Observations	3749		3749	
BIC	12080.2		12081.8	
Variance at Level 1 (Individual Level)	1.15		1.14	
Variance at Level 2 (PSU Level)	0.262		0.251	
ICC	0.049		0.046	

Notes: *p<0.05, ** p<0.01, *** p<0.001. Standard errors in parentheses

Table 6L.23 Betas and Standard Errors from Multi Level OLS Regression Models Predicting Women's Fertility (Number of Births) in 2012, Women Ages 15 to 49 at Wave II and Ever Married by Wave III, 2006 and 2012 Egyptian Labor Market Panel Survey N=5,211

Key Variables	Model 1		Model 2		Model 3		Model 4		Model 5	
	b	(SE)	b	(SE)	b	(SE)	b	(SE)	b	(SE)
Individual Household Decision-Making	0.021**	(0.0073)	-	-	-	-	-	-	-	-
Joint Household Decision-Making	-	-	0.0069	(0.0062)	-	-	-	-	-	-
Mobility	-	-	-	-	0.11***	(0.023)	-	-	-	-
Financial Autonomy	-	-	-	-	-	-	-0.013	(0.043)	-	-
Gender Attitudes	-	-	-	-	-	-	-	-	-0.088**	(0.030)
Age (yrs)	0.077***	(0.0042)	0.079***	(0.0041)	0.077***	(0.0041)	0.079***	(0.0041)	0.079***	(0.0041)
Education (Ref=Primary)										
None	0.11	(0.063)	0.11	(0.063)	0.11	(0.063)	0.11	(0.063)	0.11	(0.063)
Preparatory	-0.030	(0.078)	-0.029	(0.078)	-0.031	(0.077)	-0.027	(0.078)	-0.020	(0.078)
Secondary	-0.073	(0.063)	-0.078	(0.063)	-0.077	(0.063)	-0.077	(0.063)	-0.061	(0.063)
Intermediate or Higher	-0.17*	(0.076)	-0.19*	(0.076)	-0.18*	(0.076)	-0.18*	(0.076)	-0.16*	(0.077)
Mother's Education (Ref=Primary)										
None	0.037	(0.16)	0.041	(0.16)	0.052	(0.16)	0.038	(0.16)	0.047	(0.16)
Preparatory or Higher	-0.036	(0.043)	-0.043	(0.043)	-0.028	(0.043)	-0.041	(0.043)	-0.041	(0.043)
Married in 2012	0.73***	(0.070)	0.69***	(0.070)	0.72***	(0.069)	0.70***	(0.070)	0.69***	(0.070)
Older than 18 at First Marriage (2012)	-0.61***	(0.043)	-0.61***	(0.043)	-0.61***	(0.043)	-0.61***	(0.043)	-0.61***	(0.043)
Dowry (Ref=None) (2012)										
No Response	-0.12*	(0.057)	-0.12*	(0.057)	-0.12*	(0.057)	-0.12*	(0.057)	-0.11*	(0.057)
Some	-0.081	(0.045)	-0.081	(0.045)	-0.079	(0.045)	-0.081	(0.045)	-0.080	(0.045)
Marriage Process Duration (Months) (2012)	0.0049**	(0.0015)	0.0049***	(0.0015)	0.0048**	(0.0015)	0.0049***	(0.0015)	0.0049**	(0.0015)
Married btw 2006 and 2012	-0.95***	(0.050)	-0.96***	(0.052)	-0.91***	(0.051)	-0.98***	(0.050)	-0.96***	(0.050)
Related to Husband (Ref=No) (2012)										
No Response	0.10	(0.078)	0.10	(0.079)	0.11	(0.078)	0.10	(0.079)	0.097	(0.078)
Yes	-0.027	(0.041)	-0.026	(0.041)	-0.028	(0.041)	-0.026	(0.041)	-0.026	(0.041)
Ever Worked	-0.0061	(0.069)	-0.0015	(0.069)	-0.015	(0.069)	-0.00016	(0.069)	0.0019	(0.069)
Employment (Ref=Employed)										
Unemployed	0.050	(0.092)	0.052	(0.092)	0.051	(0.092)	0.052	(0.092)	0.057	(0.092)
Retired	0.060	(0.075)	0.059	(0.075)	0.058	(0.075)	0.058	(0.075)	0.055	(0.075)
Birth Setting: Urban	0.035	(0.054)	0.035	(0.054)	0.035	(0.054)	0.035	(0.054)	0.033	(0.054)
Region (Ref=Greater Cairo)										
Alexandria & Suez Canal	-0.042	(0.086)	-0.053	(0.086)	-0.029	(0.086)	-0.052	(0.086)	-0.056	(0.086)
Urban Lower	0.057	(0.078)	0.070	(0.079)	0.067	(0.078)	0.065	(0.079)	0.059	(0.078)
Urban Upper	0.47***	(0.077)	0.46***	(0.077)	0.50***	(0.077)	0.46***	(0.077)	0.47***	(0.076)
Rural Lower	0.14	(0.081)	0.15	(0.081)	0.16*	(0.081)	0.15	(0.081)	0.14	(0.080)
Rural Upper	0.49***	(0.087)	0.48***	(0.087)	0.51***	(0.087)	0.47***	(0.086)	0.47***	(0.086)
Household Wealth Index (Ref=Poorest)										
Poorer	-0.082	(0.049)	-0.084	(0.049)	-0.079	(0.049)	-0.083	(0.049)	-0.083	(0.049)
Middle	-0.18***	(0.052)	-0.18***	(0.052)	-0.17***	(0.052)	-0.18***	(0.052)	-0.18***	(0.052)
Richer	-0.16**	(0.057)	-0.16**	(0.058)	-0.15**	(0.057)	-0.16**	(0.058)	-0.16**	(0.057)
Richest	-0.26***	(0.065)	-0.27***	(0.065)	-0.25***	(0.065)	-0.26***	(0.065)	-0.26***	(0.065)
Household Size	0.100***	(0.0063)	0.097***	(0.0063)	0.099***	(0.0063)	0.097***	(0.0063)	0.097***	(0.0063)
Observations	5211		5211		5211		5211		5211	
BIC	16147.3		16147.0		16133.1		16150.1		16141.4	
Variance at Level 1 (Individual Level)	1.09		1.09		1.09		1.09		1.09	
Variance at Level 2 (PSU Level)	0.204		0.204		0.204		0.204		0.203	
ICC	0.058		0.058		0.058		0.058		0.058	

Notes: *p<0.05, ** p<0.01, *** p<0.001. Standard errors in parentheses

Table 6L.24 Betas and Standard Errors from Multi Level OLS Regression Models Predicting Women's Fertility (Number of Births) in 2012, Women Ages 15 to 49 at Wave II and Ever Married by Wave III, 2006 and 2012 Egyptian Labor Market Panel Survey N=5,211

Key Variables	Model 6		Model 7	
	b	(SE)	b	(SE)
Individual Household Decision-Making	0.030***	(0.0080)	0.017*	(0.0088)
Joint Household Decision-Making	0.017*	(0.0068)	0.018**	(0.0068)
Mobility	-	-	0.10***	(0.026)
Financial Autonomy	-	-	-0.022	(0.043)
Gender Attitudes	-	-	-0.10***	(0.030)
Age (yrs)	0.076***	(0.0042)	0.076***	(0.0042)
Education (Ref=Primary)				
None	0.12	(0.063)	0.11	(0.063)
Preparatory	-0.034	(0.077)	-0.026	(0.077)
Secondary	-0.076	(0.063)	-0.059	(0.063)
Intermediate or Higher	-0.18*	(0.076)	-0.15*	(0.077)
Mother's Education (Ref=Primary)				
None	0.042	(0.16)	0.064	(0.15)
Preparatory or Higher	-0.039	(0.043)	-0.031	(0.043)
Married in 2012	0.72***	(0.070)	0.70***	(0.070)
Older than 18 at First Marriage (2012)	-0.61***	(0.043)	-0.60***	(0.043)
Dowry (Ref=None) (2012)				
No Response	-0.12*	(0.057)	-0.11*	(0.057)
Some	-0.082	(0.045)	-0.079	(0.045)
Marriage Process Duration (Months) (2012)	0.0049***	(0.0015)	0.0048**	(0.0015)
Married btw 2006 and 2012	-0.91***	(0.054)	-0.85***	(0.055)
Related to Husband (Ref=No) (2012)				
No Response	0.10	(0.078)	0.099	(0.078)
Yes	-0.026	(0.041)	-0.028	(0.041)
Ever Worked	-0.010	(0.069)	-0.017	(0.069)
Employment (Ref=Employed)				
Unemployed	0.047	(0.092)	0.046	(0.092)
Retired	0.060	(0.075)	0.053	(0.075)
Birth Setting: Urban	0.034	(0.054)	0.032	(0.053)
Region (Ref=Greater Cairo)				
Alexandria & Suez Canal	-0.041	(0.086)	-0.030	(0.085)
Urban Lower	0.069	(0.078)	0.073	(0.078)
Urban Upper	0.48***	(0.077)	0.52***	(0.076)
Rural Lower	0.15	(0.081)	0.16*	(0.080)
Rural Upper	0.50***	(0.087)	0.53***	(0.086)
Household Wealth Index (Ref=Poorest)				
Poorer	-0.082	(0.049)	-0.078	(0.049)
Middle	-0.18***	(0.052)	-0.17**	(0.052)
Richer	-0.16**	(0.057)	-0.15*	(0.058)
Richest	-0.26***	(0.065)	-0.25***	(0.065)
Household Size	0.100***	(0.0063)	0.100***	(0.0063)
Female Head of Household	0.10***	(0.0064)	0.10***	(0.0064)
Observations	5211		5211	
BIC	16148.5		16148.4	
Variance at Level 1 (Individual Level)	1.09		1.09	
Variance at Level 2 (PSU Level)	0.205		0.200	
ICC	0.058		0.058	

Notes: *p<0.05, ** p<0.01, *** p<0.001. Standard errors in parentheses

Table 6D.1 Contraceptive Use Distribution of Ever Married Women 15 to 49 years old, 2008 Egyptian Demographic Health Survey

	Ever-Married Women - EDHS N=14,756	
	N	% or Mean (SD)
Contraceptive Type		
No Method	5,969	40.45
Pill	1,903	12.9
IUD	5,086	34.47
Injections	1,172	7.94
Condoms	103	0.7
Abstinence	64	0.43
Withdrawal	38	0.26
Norplant	78	0.53
Diaphragm/Foam/Gelly	3	0.02
Breastfeeding	340	2.3
Using A Contraceptive Method		
No	5,969	40.45
Yes	8,787	59.55

Table 6D.2 Bivariate Logistic Regression Models Predicting Contraceptive Use for Ever Married Women Ages 15 to 49, 2008 Egyptian Demographic and Health Survey N=14,756

Key Variables	Contraceptive Use							
	Logistic				Logistic			
	OR	(SE)	OR	(SE)	OR	(SE)	OR	(SE)
Individual Household Decision-Making	1.08***	(0.022)	-	-	-	-	1.33***	(0.029)
Joint Household Decision-Making	-	-	1.32***	(0.015)	-	-	1.39***	(0.016)
Domestic Violence Attitudes	-	-	-	-	0.91***	(0.011)	-	-

Notes: *p<0.05, ** p<0.01, *** p<0.001. Standard errors in parentheses

Table 6D.3 Odds Ratios and Standard Errors from Logistic Regression Models Predicting Contraceptive Use for Ever Married Women Ages 15 to 49, 2008 Egyptian Demographic and Health Survey N=14,756

Key Variables	OR (SE)									
	Model 1		Model 2		Model 3		Model 4		Model 5	
Individual Household Decision-Making	1.10***	(0.025)	-	-	-	-	1.32***	(0.031)	1.32***	(0.031)
Joint Household Decision-Making	-	-	1.28***	(0.016)	-	-	1.35***	(0.018)	1.36***	(0.018)
Domestic Violence Attitudes	-	-	-	-	0.99	(0.013)	-	-	1.04*	(0.015)
Age (yrs)	0.99*	(0.0041)	0.99**	(0.0040)	0.99	(0.0041)	0.99**	(0.0040)	0.99**	(0.0040)
Education (Ref=Primary)										
None	0.99	(0.11)	1.02	(0.11)	0.99	(0.11)	1.04	(0.12)	1.02	(0.12)
Preparatory	1.01	(0.12)	0.99	(0.12)	1.01	(0.12)	0.99	(0.12)	0.98	(0.12)
Secondary	1.11	(0.14)	1.10	(0.14)	1.12	(0.14)	1.08	(0.14)	1.09	(0.14)
Technical Secondary	1.29*	(0.15)	1.21	(0.15)	1.29*	(0.15)	1.18	(0.14)	1.19	(0.14)
Intermediate or Higher	1.22	(0.17)	1.14	(0.17)	1.22	(0.17)	1.10	(0.16)	1.12	(0.17)
Older than 18 at First Marriage	1.05	(0.049)	1.05	(0.049)	1.05	(0.049)	1.04	(0.049)	1.04	(0.049)
Ever Worked	1.02	(0.058)	1.03	(0.060)	1.02	(0.059)	1.01	(0.059)	1.01	(0.059)
Christian	1.13	(0.10)	1.14	(0.11)	1.14	(0.10)	1.11	(0.10)	1.11	(0.11)
Sons	4.11***	(0.21)	4.12***	(0.21)	4.12***	(0.21)	4.04***	(0.21)	4.05***	(0.21)
Birth Setting: Urban	1.29	(0.18)	1.16	(0.15)	1.24	(0.17)	1.29	(0.18)	1.29	(0.18)
Region (Ref=Greater Cairo)										
Urban Lower	0.93	(0.084)	0.84	(0.077)	0.92	(0.083)	0.86	(0.078)	0.86	(0.078)
Urban Upper	0.78**	(0.064)	0.85*	(0.069)	0.79**	(0.064)	0.85	(0.071)	0.84*	(0.071)
Rural Lower	1.27	(0.19)	1.07	(0.16)	1.21	(0.18)	1.19	(0.18)	1.19	(0.18)
Rural Upper	0.62***	(0.084)	0.63***	(0.082)	0.61***	(0.081)	0.69**	(0.093)	0.68**	(0.092)
Household Wealth Index (Ref=Poorest)										
Poorer	0.90	(0.058)	0.90	(0.059)	0.90	(0.058)	0.89	(0.059)	0.90	(0.060)
Middle	1.02	(0.074)	0.97	(0.072)	1.01	(0.073)	0.97	(0.074)	0.99	(0.075)
Richer	0.97	(0.081)	0.89	(0.077)	0.95	(0.080)	0.90	(0.078)	0.92	(0.080)
Richest	1.16	(0.11)	1.05	(0.10)	1.14	(0.11)	1.05	(0.10)	1.08	(0.10)
Household Size	1.05***	(0.010)	1.06***	(0.0097)	1.05***	(0.0100)	1.06***	(0.0099)	1.06***	(0.0099)
Husband's Age (yrs)	0.98***	(0.0029)	0.98***	(0.0028)	0.98***	(0.0029)	0.98***	(0.0028)	0.98***	(0.0028)
Husband's Education (Ref=Primary)										
None	0.76**	(0.067)	0.82*	(0.074)	0.77**	(0.068)	0.80*	(0.072)	0.80*	(0.072)
Preparatory	1.09	(0.11)	1.13	(0.12)	1.11	(0.12)	1.08	(0.11)	1.08	(0.11)
Secondary	1.07	(0.11)	1.09	(0.11)	1.07	(0.11)	1.08	(0.11)	1.08	(0.11)
Technical Secondary	0.98	(0.092)	0.99	(0.095)	0.98	(0.092)	0.98	(0.094)	0.98	(0.094)
Intermediate or Higher	1.07	(0.12)	1.02	(0.12)	1.06	(0.12)	1.04	(0.12)	1.04	(0.12)

Notes: *p<0.05, ** p<0.01, *** p<0.001. Standard errors in parentheses

Table 6D.4 Multilevel Logistic Regression Models Predicting Contraceptive Use for Ever Married Women Ages 15 to 49, 2008 Egyptian Demographic and Health Survey N=14,756

Key Variables	OR (SE)									
	Model 1		Model 2		Model 3		Model 4		Model 5	
Individual Household Decision-Making	1.10***	(0.020)	-	-	-	-	1.29***	(0.026)	1.29***	(0.026)
Joint Household Decision-Making	-	-	1.29***	(0.015)	-	-	1.36***	(0.017)	1.36***	(0.017)
Domestic Violence Attitudes	-	-	-	-	0.98	(0.012)	-	-	1.02	(0.013)
Age (yrs)	0.99*	(0.0036)	0.99**	(0.0036)	0.99*	(0.0036)	0.99***	(0.0037)	0.99***	(0.0037)
Education (Ref=Primary)										
None	0.91	(0.094)	0.96	(0.10)	0.92	(0.095)	0.96	(0.10)	0.96	(0.10)
Preparatory	0.96	(0.11)	0.96	(0.11)	0.97	(0.11)	0.95	(0.11)	0.94	(0.11)
Secondary	1.05	(0.12)	1.06	(0.12)	1.06	(0.12)	1.03	(0.12)	1.03	(0.12)
Technical Secondary	1.21	(0.13)	1.15	(0.12)	1.21	(0.13)	1.11	(0.12)	1.12	(0.12)
Intermediate or Higher	1.21	(0.16)	1.13	(0.15)	1.21	(0.16)	1.09	(0.14)	1.09	(0.15)
Older than 18 at First Marriage	1.05	(0.047)	1.05	(0.048)	1.05	(0.047)	1.05	(0.048)	1.05	(0.048)
Ever Worked	1.01	(0.055)	1.01	(0.056)	1.01	(0.055)	1.00	(0.056)	1.00	(0.056)
Christian	1.25*	(0.11)	1.23*	(0.11)	1.25*	(0.11)	1.20*	(0.11)	1.21*	(0.11)
Sons	4.50***	(0.22)	4.54***	(0.23)	4.53***	(0.22)	4.45***	(0.22)	4.45***	(0.22)
Birth Setting: Urban	1.20	(0.15)	1.12	(0.15)	1.15	(0.15)	1.24	(0.16)	1.24	(0.16)
Region (Ref=Greater Cairo)										
Urban Lower	0.97	(0.087)	0.87	(0.080)	0.96	(0.086)	0.88	(0.081)	0.88	(0.081)
Urban Upper	0.77**	(0.068)	0.81*	(0.073)	0.77**	(0.068)	0.81*	(0.073)	0.80*	(0.073)
Rural Lower	1.28	(0.19)	1.11	(0.16)	1.23	(0.18)	1.22	(0.18)	1.22	(0.18)
Rural Upper	0.61***	(0.080)	0.63***	(0.085)	0.60***	(0.079)	0.68**	(0.093)	0.67**	(0.092)
Household Wealth Index (Ref=Poorest)										
Poorer	0.88*	(0.053)	0.87*	(0.053)	0.88*	(0.053)	0.86*	(0.053)	0.87*	(0.054)
Middle	1.01	(0.067)	0.96	(0.065)	1.00	(0.066)	0.95	(0.065)	0.96	(0.066)
Richer	0.99	(0.076)	0.92	(0.072)	0.97	(0.075)	0.92	(0.072)	0.93	(0.074)
Richest	1.13	(0.10)	1.02	(0.093)	1.11	(0.099)	1.02	(0.093)	1.03	(0.095)
Household Size	1.05***	(0.0067)	1.06***	(0.0069)	1.05***	(0.0067)	1.07***	(0.0070)	1.06***	(0.0070)
Husband's Age (yrs)	0.98***	(0.0027)	0.98***	(0.0027)	0.98***	(0.0026)	0.98***	(0.0028)	0.98***	(0.0028)
Husband's Education (Ref=Primary)										
None	0.77**	(0.068)	0.82*	(0.074)	0.78**	(0.069)	0.80*	(0.073)	0.80*	(0.073)
Preparatory	1.12	(0.11)	1.14	(0.11)	1.14	(0.11)	1.09	(0.11)	1.09	(0.11)
Secondary	1.09	(0.11)	1.09	(0.11)	1.09	(0.11)	1.07	(0.11)	1.07	(0.11)
Technical Secondary	1.02	(0.089)	1.01	(0.090)	1.02	(0.089)	1.00	(0.090)	1.00	(0.090)
Intermediate or Higher	1.09	(0.12)	1.04	(0.11)	1.08	(0.11)	1.05	(0.11)	1.06	(0.11)
Variance of Region at Level 2 (PSU Level)	0.185	(0.024)	0.199	(0.024)	0.182	(0.024)	0.204	(0.027)	0.204	(0.027)
ICC	0.071		0.059		0.062		0.059		0.059	

Notes: *p<0.05, ** p<0.01, *** p<0.001. Standard errors in parentheses

Chapter Seven: Discussion, Implications, and Strengths and Limitations

7.1 Summary of the Study

The overall objectives of the current study were to examine the individual and household determinants of women's autonomy among a nationally representative sample of reproductive age women (15 to 49 years old) in Egypt, and to explore the relationship between autonomy and fertility over time. This study used two nationally representative datasets: two waves of the Egyptian Labor Market Survey (2006 and 2012 ELMPS), and one wave of the Egyptian Demographic and Health Survey (2008). This study also uses six key measures of autonomy: individual household decision-making, joint household decision-making, mobility, financial autonomy, attitudes towards gender norms, and attitudes towards domestic violence to disentangle autonomous attitudes and behaviors from women's status. Specific significant associations for household factors and women's autonomy were found, as well as a significant relationship between autonomy and both contraceptive use and fertility. Community level variation in autonomy was also found.

The findings of this dissertation are noteworthy in building upon the life course framework by indicating that women's fertility plays a role in later life autonomy. Additionally, this study is the first to look at how women's autonomy changes over time in Egypt. This study also assessed variations in community effects on autonomy and fertility, finding significant regional variation in both autonomy and fertility.

This section will discuss the major findings of the dissertation by specific aim. I will then describe the implications of the study. The chapter will end with a discussion of strengths and limitations.

7.2 Discussion of Major Findings

7.2a Aim 1: To examine the determinants of women's autonomy.

Overall, the main hypotheses of this aim were supported. Results indicated that several individual and household determinants were significantly associated with autonomy in 2006 with household determinants adding explanatory power to the models beyond that of individual aspects of women's lives. Results also showed community level variation in autonomy and that determinants of autonomy vary based on the measure of autonomy, but determinants of each measure remain consistent across data sources. At the individual level, age, education, characteristics of marriage, and employment are associated with various measures of autonomy. As predicted, across all measures of autonomy, household wealth and region add explanatory power to the model beyond that of individual factors, and communities at level-2 explain 12 – 20% of the variance in women's autonomy.

At the individual level, age and marital status were consistently associated with autonomy across all measures. Older women have more financial autonomy, individual decision-making, and mobility, which is consistent with past work that shows that older women, past their reproductive years, typically have greater freedom of movement and control over household decisions (Acharya et al. 2010; Mahmud et al. 2012; Rahman and Rao 2004). Women who are separated make more individual decisions, less joint decisions, have greater financial autonomy, have more positive attitudes towards gender norms, and less favorable attitudes towards domestic violence. These results suggest that something about marriage or the presence of a spouse limits women's capacity to exercise control in their lives, which is contrary to previous work that has shown married women have more control over personal assets and income (Kantor 2003).

Similar to previous work, employed women tend to have greater financial autonomy (Anderson and Eswaran 2009; Kantor 2003). This is not surprising since women who work have direct access to financial resources. Participation in the labor force does not necessarily translate to the other measures of female autonomy as women have to be able to convert resources into power and action (Kabeer 1999). Surprisingly, education is not a determinant of all measures of female autonomy in 2006. Education is associated with the attitudinal measures of women's autonomy: women with higher education have more positive attitudes towards gender norms and more negative attitudes towards domestic violence compared to women with just a primary education. This suggests that obtaining an education changes women's perspectives on women's roles and how women should be treated in the household, but does not necessarily translate into behavioral changes of exercising more control. This is consistent with research showing that although Egyptian women have made educational gains, only labor force participation appears to change their gender roles (Mensch et al. 2003).

More importantly, the addition of household factors like wealth, size, and location helps explain variation in women's autonomy across all measures of autonomy; although, not always in the same direction. Household wealth is significantly associated with household decision-making, both individual and joint decisions, mobility, gender attitudes, domestic violence attitudes, and financial autonomy. In 2006, when autonomy is operationalized as individual decision-making and mobility, the wealthiest women have less autonomy compared to the poorest women. This finding is consistent with the results of Acharya et al. (2010) that women in wealthier households are less involved in household decisions. This could be due to the fact that these women are more likely to have household help take care of errands and other daily needs outside the household. In fact, in 2006, the wealthiest women do have more joint participation in

household decisions compared to the poorest women. Women belonging to more affluent families could also have less bargaining power in individual decision-making because more affluent families may be more particular about their family honor, which is tied to women's actions and mobility (Eswaran and Malhotra 2011).

Household size had a significant impact on women's autonomy. Women in larger households less frequently make individual decisions, participate in more joint decisions, have a greater belief in domestic violence, and less financial autonomy. Such findings support linkages between living with extended families and women having less control in the household (Rammohan and Johar 2009). This is usually due to the involvement of mothers-in-law in household decision-making. A woman is more restrained if she is living with her husband's parents and siblings rather than just with her husband in a nuclear family. Studies have also found that if the couple stays with the wife's natal family, then her autonomy is also reduced because it is difficult for her to exercise autonomy with her parents (Eswaran and Malhotra 2011).

In addition to household size and wealth, the location of the household is of particular importance for women's autonomy. My findings indicate that women's autonomy, in terms of decision-making, mobility, access to financial resources, attitudes towards gender norms, and attitudes towards domestic violence, is highly constrained in Upper Egypt. A clear regional divide, net of individual and household characteristics, is evident in almost every index of autonomy. Findings also confirm considerable variation in the levels and determinants of women's autonomy in this region. Specifically, the women in rural and urban Upper Egypt and rural Lower Egypt have less autonomy as compared to women in the Cairo area. As expected, the women in both rural and urban Upper Egypt have less autonomy as compared to women in the Cairo area. Despite how autonomy is measured, women in Upper Egypt have less autonomy

compared to women in Lower Egypt in 2006. This is consistent with research that shows that women in Upper Egypt are significantly worse off across most women's health outcomes (Akmatov et al. 2008; Casterline et al. 2003; Yount and Li 2010).

There are rural and urban differences in autonomy as women in rural Upper Egypt have less autonomy as compared to women in urban Upper Egypt. These results are consistent with work that shows more patriarchal views in rural areas of the Middle East (Linos, Khawaja and Kaplan 2012) and rural Egypt (Ambrosetti et al. 2013; Yount et al. 2000) and rural and urban differences in measures of autonomy (Corroon et al. 2014). The governorates in Upper Egypt are the least developed, most impoverished with poor housing conditions, and have little access to social services. The gender differentials in education in Upper Egypt are also the highest in the country. The regional variation and urban and rural differences in autonomy demonstrates that these community factors, while not directly test in the models, are not conducive to promotion of autonomy. Given the lack of resources, poor access to services, and dominant patriarchal norms women experience in Upper Egypt, it is not surprising that they exercise little control in their lives compared to women in the rest of the country. These findings support the theory of gender and power and assertion that social structures like schools create mechanisms like unequal distribution of resources, which perpetuate gender-based inequities for women and an imbalance of control (Wingood and DiClemente 2000).

Findings also confirm the second hypothesis that determinants of autonomy do not affect dimensions or measures of autonomy in the same way. The interplay of factors in women's lives affect different dimensions of autonomy. Education influences attitudinal measures of autonomy like attitudes towards gender norms and attitudes towards domestic violence, but has little effect on behavioral measures of autonomy. This begins to show the characteristics of women's lives

that are affecting different aspects of autonomy. For example, a woman might obtain a higher education and have an altitudinal shift in how much household controls he believes a woman should be granted, but the same woman's ability to make household decisions might be based on whether she is married or the age she was married. However, while individual aspects of women's lives have varying associations with measures of autonomy (like employment leading to greater financial autonomy, but not associated with other measures), household characteristics were consistently associated with all attitudinal and behavioral dimensions of autonomy. This shows that women's control within a household is largely determined by the socioeconomic context of that household. Importantly, results show that the community-level captures information above and beyond the individual and household characteristics and does not simply serve as a proxy for individual and household measures.

With respect to the third hypothesis for the first study aim, determinants of autonomy remained largely similar between the ELMPS and the EDHS. When comparing across multiple outcomes including individual and joint decision-making and domestic violence attitudes, results were essentially the same. Again, models show that household determinants like region, household wealth, and household size are important determinants of autonomy. As found in the 2006 ELMPS cross sectional results, the matching ELMPS and EDHS models show that women in richer households have more autonomy compared to the poorest households and women in rural Egypt and Upper Egypt have less autonomy compared to women in Greater Cairo. Consistent results across two data sources demonstrate the validity of the results and findings. This also shows that measures of autonomy might be more concrete than initially assumed. Despite the limitations of relying on survey research, this shows that autonomy measures can be consistent across sampling frames. The data are triangulated as they are from different times

(2006 and 2008) and samples of individuals (both nationally representative of Egypt) yet they show essentially the same determinants of autonomy. Both demonstrate the importance of household and community in women's autonomy in the mid to late 2000s.

7.2b Aim 2: To examine the changes and determinants of changes in women's autonomy over the life course.

Overall, the main hypotheses of this aim were supported. Using the 2012 cross sectional ELMPS data and the 2006 to 2012 longitudinal ELMPS data, I found that again household-level determinants and community membership are associated with women's autonomy. Importantly, results indicate that fertility or number of births in 2006 is associated with autonomy in 2012: women who had more births in 2006 have more autonomy in 2012. Across all measures of autonomy, household wealth and region add explanatory power to the model beyond that of individual factors, and communities explain 3 – 14% of the variance in women's autonomy.

If the cross sectional analyses from Aim 1 (ELMPS 2006) and the cross sectional analyses from Aim 2 (ELMPS 2012) are compared, results are largely similar. Differences seem to arise from determinants that relate to spouses. For example, in 2006, in general, characteristics of spouses were not associated with women's autonomy, but by 2012, attributes of spouses like age, education, and current employment status are associated with several measures of women's autonomy. In 2012, women with more educated spouses make less individual decisions, have less mobility, and less financial autonomy, but make more joint decisions compared to women with less educated spouses.

Given the changing social conditions and increases in violence and sexual harassment of women after the uprisings in 2011, perhaps, men's gender roles were reinforced as dominating forces in women's lives and these men are more involved in household decisions and restrictive

about women's movement. Modified resource theory posits that in highly patriarchal settings, a husband's resources are irrelevant to patterns of decision-making in marriage because norms dictate that husbands control major decisions. In modified patriarchal societies, egalitarian norms emerge in the upper class: a husband's economic resources are inversely related to his marital power. In transitional egalitarian societies, egalitarian norms replace patriarchal norms in all classes, an individual's worth is ascertained on the basis of socioeconomic achievements, and any increase in a husband's economic resources will increase his control in the household (Rodman 1967, 1972). Educational equality between spouses is an indicator of more egalitarian communities so when both the woman and a man have an intermediate or higher education, greater participation in joint decision-making is an expected outcome. In 2012, women with a dowry are contributing resources to their household during a time of economic difficulty in Egypt, and as a result, obtaining some control over joint decision-making. This aligns with research that shows dowries allow women to practice more control within the marital household (Srinivasan and Bedi 2007).

The cross sectional results collectively suggest that there is a shift in the determinants of joint decision-making between 2006 and 2012. In Egypt, joint decision-making might be a better measure of personal control because women should feel comfortable negotiating various household decisions with family members. Women who have the final say in household decisions might actually play a more traditional gender role in the family (Mumtaz and Salway 2009; Pallitto and O'Campo 2005). Joint decision-making could also imply that not just the decisions, but also the household work is shared. Women's decision-making with others has been found to be associated with better women's mental health in Egypt (Yount et al. 2014).

The longitudinal models of women's autonomy over time (2006 – 2012) are the first such analyses in Egypt. Results show that for women who are married in 2006, joint decision-making declines over time, but individual decision-making, mobility, and financial autonomy both improve by 2012. For women who are married by 2012, autonomy improves over time across all four measures (individual and joint decision making, mobility, and financial autonomy). The improvement in joint decision-making was not because of women who were married between 2006 and 2012 because these women have less individual and joint household decision-making and mobility in 2012. Those who are making more joint decisions in 2012 were married before 2006 and not separated by 2012. Women who were either widowed or divorced by 2012 make more individual decisions and less joint decisions over time. These results are not surprising as these women are also more likely to live alone and therefore, not have the same opportunities to make decisions with others.

My findings imply that both the duration of marriage and being separated are associated with improvements in autonomy over time. Women who are married for longer periods of time might develop more control in the household, and women who are separated do not have partners to share household control with. Findings align with previous work that has shown that married women have more control over personal decisions and household assets (Kantor 2003), women in more lengthy marriages have more input in household decisions (Hindin 2002) and widowhood has been linked to more family power, specifically, financial and life course decisions (Yount and Agree 2004). Also consistent with previous research, my results show that over time, women who were married at 18 years or older have more household autonomy (Abadian 1996; Jensen and Thornton 2003). Women waiting longer to marry may have more

opportunity for education, employment, and greater choice in a spouse, which can enhance women's ability to negotiate and make decisions (Fargues 2005; Niraula and Morgan 1996).

Greater autonomy observed in 2012 is not due to age because contrary my cross sectional findings, older women make fewer individual and joint household decisions over time. This is in contrast to previous cross sectional work from other countries that implies older women have greater control over household decisions (Acharya et al. 2010; Gupta 1995; Mahmud et al. 2012; Rahman and Rao 2004). Older women do not have more autonomy over time in Egypt. These findings contradict the assumption of modernization theorists that in less developed settings, family power of older adults increases with age, and instead support the idea that differences in the pace of decline for women are a function of gendered dependencies on kin. In highly patriarchal societies, multiple male relatives are obligated to support female kin. These women could experience a loss of control because they are in collectivist families, where it is normative for other family members to make decisions for them. Adult children could be taking some control in household decision-making for elderly women. These results are consistent with the cross sectional work of Yount and Agree (2004), which found that older women participate less often than older men in most decisions in Egypt, although, it varies by decision type (preparation of food, health needs, etc.). These findings further demonstrate that women's autonomy varies by households and normative context.

The effects of household characteristics and context also vary from the 2006 and 2012 cross sectional findings. For the changes in autonomy over time, household wealth and size are largely not associated with autonomy, when accounting for community-level variation. Women in larger households have less financial autonomy, but household size is not associated with any other measure of autonomy. Despite household wealth being significantly associated with all

measures of autonomy in 2006 and in 2012, it is not associated with autonomy over time. The disappearance of the effects in longitudinal models for household wealth suggests that household wealth might affect women and girls earlier in life, setting them on an autonomy trajectory that leads up to the Wave II (2006) survey and through the Wave III (2012) survey. Alternatively, household location has been shown to moderate the association between household wealth and autonomy (Senarath and Gunawardena 2009). Perhaps, over time, location or community membership mediates or fully explains the relationship between household wealth and autonomy. This aligns with research on domestic violence in Minya, Egypt, which shows that regardless of the level of household wealth, the amount of abuse a woman experiences depends on her access to social and economic resources outside of marriage (Yount 2005b).

The region of the household is associated with women's autonomy over time in Egypt, and is consistent with the cross sectional results from 2006 and 2012. Women in both urban and rural Upper Egypt have less autonomy compared to women in Greater Cairo. Women in Upper Egypt make fewer individual decisions, have less mobility, and have less financial autonomy over time. This shows that even with all the social changes in Egypt between 2006 and 2012 and with the uprisings largely based in Cairo and Alexandria in 2011, women in Upper Egypt continue to have less household control than women in the rest of the country. My findings also show that community membership not only determines autonomy at one point in time, but continues to shape women's autonomy over time despite individual life changes, like marriage.

The longitudinal findings also provide further support that each measure of autonomy is demonstrating something different about women's control. Not every indicator of autonomy is associated with every measure of autonomy over time. Individual decision-making is associated with individual decision-making, mobility, and autonomy over time. Greater joint decision-

making in 2006 is associated with more autonomy in 2012 except in terms of financial autonomy. The women who participate in more joint decisions in 2006 could be more communicative with other household members, allowing them to gain control in other aspects of their lives, like mobility, over time. More mobility in 2006 is associated with more autonomy across all measures of autonomy in 2012. Perhaps women who are able to leave the house without permission can obtain the necessary resources to exercise control within the household across other dimensions of autonomy like decision-making. The attitudinal measures of autonomy are largely not associated with behavior measures of autonomy over time. Attitudes towards gender norms is only associated with less individual decision-making in 2012, which shows that if a woman believes in more egalitarian norms, this does not necessarily translate into autonomous behavioral changes. Financial autonomy and attitudes towards domestic violence in 2006 are not associated with any aspect of autonomy in 2012.

As hypothesized, women who have had a birth in 2006 have more autonomy in 2012. Women who have had more births by 2006, make more individual and joint household decisions and have more mobility. There is no association with financial autonomy. While no studies have looked at the effect of births on women's autonomy later in life, these findings reflect studies that show having a son leads to greater autonomy (Hindin 2000; Mumtaz and Salway 2005). This suggests the critical nature of including fertility in the study of autonomy over time in Egypt, and demonstrates the importance of having a child for women's position within the family and community.

From a methodological standpoint, these findings highlight the problematic aspects of conducting cross sectional analyses of autonomy and fertility, as the relationship seems to go both ways. A child can be a source of household autonomy for these women, which shows that

children are a resource that women need to exercise control. Child bearing is a trigger for a set of choices and practices surrounding childcare, which provide women with more opportunity to foster household control. Having children also raises women's value in Egypt both to their families and the broader community. It is expected of Egyptian women to have children, and preferably, sons, therefore, it is not surprising that women experience greater control after bearing a child. In most countries, bearing children is associated with more bargaining power for married women (Kishor and Subaiya 2008).

7.2c Aim 3: To examine the relationship between women's autonomy and fertility over the life course.

In addition to confirming the association between fertility and autonomy later in life, this study also examines the longitudinal relationship between autonomy and fertility. This research is one of the few studies examining this relationship over time; for previous research on autonomy and fertility is cross sectional (Abadian 1996; Balk 1994; Hindin 2000; Hogan et al. 1999a; Khadivzadeh, Roudsari and Bahrami 2014; Mason 1987; Neyer, Lappegård and Vignoli 2013; Ojo and Adesina 2014; Schuler et al. 1997; Upadhyay and Karasek 2012). Findings indicate that the number of births is higher in 2012 than in 2006. One hypothesis was supported, while the other was not: autonomy was associated with greater likelihood to use contraceptives at one point in time, but also more births over time.

My hypothesis that more autonomous women have fewer births is not supported. For both the sample of married women in 2006 and ever-married women by 2012, more autonomous women have more births in 2012. Specifically, when women's autonomy is measured as household decision-making and mobility, more autonomous women are more likely to have had a birth and a greater number of births. There were no associations for financial autonomy or

attitudes towards domestic violence. The only measure of women's autonomy that consistent was associated with fewer births was attitudes towards gender norms. Contrary to my findings, several studies point to an inverse relationship between autonomy and fertility (Audinarayana 1997; Hindin 2000; Kabir, Ibrahim and Kawsar 2005; Khan and Raeside 1997), and even more research has found non-significant associations between autonomy and fertility (Abadian 1996; Al Riyami et al. 2004; Kravdal 2001; Larsen and Hollos 2003; Malhotra, Vanneman and Kishor 1995). A few studies are consistent with my findings and have found positive associations (Amin, Hill and Li 1995; Sathar and Kazi 1997; Upadhyay and Karasek 2012). For example, Upadhyay and Karasek (2012) found that in Namibia greater household decision-making and in Zambia, a belief in women's right to refuse sex were associated with having more children than desired. Positive associations with desired fertility have also been found. For example, women who had decision-making autonomy in Eritrea were more likely to desire larger families (Woldemicael 2009).

In Egypt, the only measure of autonomy that was associated with a fewer number of births over time was attitudes towards gender norms. If women had more egalitarian attitudes, these women were associated with fewer births over time. In Egypt, men and women continue to conform to traditional notions of what it means to be male and female in Middle Eastern society and many women believe that a wife needs a husband's permission for everything (Mensch et al. 2003). A shift in this normative attitude implies having beliefs that go against the traditional family and social expectations for women so it would be reasonable to assume that women who score highly in favor of egalitarian gender norms are extremely progressive in Egyptian society. As seen in the results for Aim 1, these women are more educated, from households in the middle wealth category, and in the Greater Cairo region.

My results also show important community-level variation in number of births. Even when accounting for women's autonomy, women in communities in both urban and rural Upper Egypt, have a higher number of births compared to women in Greater Cairo. The only regional differences were observed for Upper Egypt. Only two other studies of autonomy and fertility include contextual-level measures. For example, Moursund and Kravdal (2003) found that at the community-level, women who live in areas with higher mobility were less likely to report wanting to stop childbearing. In Nigeria, Kritz et al. (2000) compared fertility desires from married women in five regional groups and found that greater decision-making and individual financial contributions were not associated with the desire for more children after controlling for regional variation. In areas of high gender equity, no significant associations were found between autonomy and fertility desires for more children. My results and these contextual studies suggest that the context in which women live may be more influential on fertility than their own specific autonomy.

In order to look at one of the pathways between autonomy and fertility, I also examined the relationship between autonomy and contraceptive use. While most studies examine a single dimension of autonomy and contraceptive use, I used three measures of autonomy. Similar to past work that found a relationship between decisional autonomy and contraceptive use in Egypt (Giusti and Vignoli 2006), across all measures of autonomy, more autonomous women have greater odds of using contraceptives. While many women are using a long acting reversible contraceptive method, there were no differences in short term or long-term method by autonomy. There were also no differences by hormonal and barrier methods. In Egypt, autonomous women are using a contraceptive method. Given the son preference in Egypt (El-Zeini 2008; Yount 2005c), the finding that women with sons are more likely to be using a contraceptive method is

not surprising. While more autonomous women are likely to use contraceptives, women in rural and urban Upper Egypt are less likely to use a method. Community fertility norms, gender inequalities, health knowledge, and exposure to family planning are all associated with contraceptive use (Elfstrom and Stephenson 2012). Upper Egypt is characterized by higher fertility norms, greater gender inequality, and lack of access to family planning so results that women use less contraceptives in this region aligns with work on unmet need for family planning in Upper Egypt (Casterline et al. 2003).

In sum, women who make more household decisions either individually or jointly, had more births in 2012. Women who made more household decisions also used contraceptives in 2008. Perhaps, more autonomous women are using contraceptives, but planning births and fulfilling social expectations of high fertility.

7.3 Implications of Key Findings

Women's autonomy is an important determinant of women's health and well being and, therefore, a focus of global development efforts (Malhotra and Schuler 2005; Rao et al. 2013). The findings of this dissertation offered new insights about women's autonomy for public health and social science research in several ways. First, to capture the multidimensionality of women's autonomy, six separate domains of autonomy were examined: individual household decision-making, joint household decision-making, freedom of movement, financial autonomy, attitudes towards gender norms, and attitudes towards domestic violence. Second, as informed by the life course perspective, to capture the different characteristics of women's lives and dynamic nature of autonomy, autonomy was examined over time. Additionally, as informed by the theory of gender and power and multiple domains of women's lives affecting their ability to exercise control, multilevel determinants of autonomy and changes in autonomy were examined.

Furthermore, this dissertation added to the literature on autonomy and fertility by examining the relationship in both directions and over time.

7.3a Determinants of Autonomy

Cross sectional and longitudinal results show that as expected determinants of women's autonomy in Egypt vary based on how autonomy is measured. This shows that different aspects of women's lives influence whether they have control in decisions, have egalitarian attitudes, or have mobility, and that autonomy research should not aggregate these measures and domains of autonomy. It is possible for a woman to have greater value to the household in terms of individual decision-making without necessarily having greater independence vis-à-vis men (mobility and access to financial resources). Research on each measure of autonomy provides important insight into the link between women's individual, household, and community characteristics and control over the life course. While education and employment are often used as proxy measures for autonomy, education is only associated with attitudinal measures of autonomy, and employment is only associated with financial autonomy. This implies that depending on the aspect of autonomy being examined, this study provides further evidence for the weakness of socioeconomic proxies as measures of women's autonomy (Balk 1994; Govindasamy and Malhotra 1996; Malhotra and Schuler 2005).

In Egypt, women's economic participation is extremely low and results from 2012 confirm that it continues to be. Work places continue to be closed off to women, and women's work is usually a response to a decline in men's real wages (Fargues 2005). In order for education and employment to lead to greater autonomy, women have to be able to convert educational and employment resources into household behaviors and actions (Kabeer 1999). Egyptian women do not have employment resources and education has little effect on the

household behaviors. When accounting for household and community factors, the effects of education on autonomy disappear. Perhaps, in Egypt, education and autonomy are related in other ways. For example, girls with less autonomy are not allowed to pursue a higher education, girls in highly patriarchal communities of Upper Egypt are not allowed to go to school, or families with greater household wealth both encourage girls to be autonomous and to pursue a higher education. Future research should explore these alternative pathways as this study shows that education does not necessarily lead to greater household control. Although women in Egypt are encouraged to obtain a modern education, they are also subject to laws that allow no space for negotiation. These laws deny them the full freedom that men enjoy in marriage, divorce, and life security, which places them permanently under patriarchal control within household and communities. This social environment is not favorable to transferring educational gains into autonomous actions. In general, changes in policy might focus on the sources of women's socioeconomic dependence on marriage.

Overall findings show that determinants for individual decision-making and mobility are largely similar both in the cross sectional and longitudinal results. This implies that there is something similar about a woman making household decisions on her own and leaving the house without permission in Egypt. These dimensions of autonomy are also positively related over time as women with more mobility in 2006 make more decisions in 2012, and women who make more decisions in 2006 have more mobility in 2012. The similarity of the determinants of these measures shows that there are social processes in Egypt like marriage, which have an effect on what a woman can and cannot control on her own. The present study confirms that women's individual autonomy is a separate domain from autonomous actions or beliefs involving others.

The only measure of autonomy that included the role of others in the household was joint decision-making. Most notably, determinants of joint decision-making and individual decision-making were very different. Women in Egypt participate in more joint decisions than making individual decisions. Importantly, women can have a preference for relationships of care and dependency such as those within marriage or other family structures and be just as autonomous as preferences for self-reliance so it would be difficult to claim that women making more individual decisions are more autonomous than women making joint decisions. Both types of decisions are providing some insights into the social processes of women's lives.

Perhaps whether individual or joint decision-making is a better indicator of autonomy in Egypt depends on the type of decision and whether the decision is in regards to the household, children, or women themselves. Additionally, while separating household decision-making into individual and joint decisions contextualizes who is making the decisions, the questions on household decision-making provide little insight into discussions women may have had with partners or others about those household decisions. Research on women's autonomy has documented the importance of males and male perspectives on autonomy (Allendorf 2007; Becker, Fonseca-Becker and Schenck-Yglesias 2006; Ehrhardt et al. 2009; Ghuman, Lee and Smith 2006; Jejeebhoy 2002; Mullany, Hindin and Becker 2005). While the data do not include the male perspective on autonomy or the context of household discussions, in Egypt, the high prevalence of joint decision-making shows the importance of considering the men involved in women's lives. Any programmatic efforts to improve the status of women in Egypt have to include men. Educational programs about gender equality need to be geared towards both women and men.

Programs need to also be sensitive to prevailing gender norms operating at the community level. Gender norms are contextually specific (Stephenson et al. 2012), and cross sectional and longitudinal results consistently show community-level variation in women's autonomy. This highlights the importance of the woman's location in her level of control and ability to exercise power in the household. The nature of the relationships of individual and household characteristics and autonomy seems to hinge, to a considerable degree, on where on the continuum of gender relations and women's status a particular setting is situated. Women in communities in Upper Egypt have less autonomy than women in communities in other regions in 2006, 2008, 2012, and over time from 2006 to 2008. In Egypt, as previously stated, Upper Egypt is characterized as the more conservative non-egalitarian region. In highly conservative settings, such as communities in Upper Egypt, women who venture outside the home or the traditional "male space" are likely to be viewed as provocative because they challenge prevailing norms governing women's propriety and modesty. Women in Upper Egypt have a restricted range of social and economic resources available to them outside their "traditional" domains (kinship and marriage, social or religious groups). This deprives women of access to or control over the strategic resources on which real power or autonomy depends.

Theoretically it would be expected that people from the same area might be more similar to each other in terms of attitudes and behaviors than people from other areas (Merlo et al. 2005). People in the same communities are subject to common contextual influences. This contextual phenomenon expresses itself as clustering of individual attitudes and behaviors within a community. That is, a portion of the differences in women's autonomy are attributable to the communities women reside in. While state policies can give women more legal rights, encourage them to acquire skills, and facilitate their movement into the public domain, ultimately local

economic and social factors determine how competing policies and values are received and implemented. This is why considerable variation in the status of women can exist between one community and another, even where both communities share similar cultural values and are subject to the same state policies and laws.

Similar to my findings, community norms have explained variation in women's autonomy (Dollar and Gatti 1999; Hogan et al. 1999b; Jejeebhoy and Sathar 2001; Rammohan and Johar 2009). However, the question that remains is through what pathway communities affects autonomy. The positive effects of community on women's autonomy maybe transmitted through amenities and social resources such as reciprocal exchange, collective efficacy, and access to civic organizations. Favorable community conditions (e.g., affluence, residential stability) can promote women's control within a household by creating a safe environment, social ties, and support networks that promote autonomy. Community disadvantage can erode these resources. For example, several studies have found that neighborhood poverty undermines self-efficacy and social support (Jason and Robert 2000; Turney and Harknett 2010).

The actual pathways for community variation in autonomy in Egypt are still unclear because I cannot consider other variables that might affect female autonomy like district-level rural development expenditure, community programs for women, activity of nongovernmental organizations, etc. Future developments of this research may point towards a reduction of the residual variability related to community heterogeneity: additional macro indicators would help test the effect on individual autonomy.

7.3b Longitudinal Patterns of Autonomy

By using longitudinal data from the Egyptian Labor Market Panel, the results show that women's autonomy changes over time and determinants of autonomy changer over time.

Between 2006 and 2012, women's autonomy improved over time. In the midst of social changes in Egypt, women made more decisions, had more mobility, and were more financially autonomous than they were in 2006. While many women were involved in the Arab Spring uprisings in Egypt, the revolution brought gender inequalities to the forefront. Women stayed in Tahrir Square, defying their old claims that women should work inside their homes taking care of husbands and children. Many women were also sexually harassed, attacked, and dismissed from government positions (Taheer 2012). To this day, women continue to be excluded from political representation and experience sexual harassment and violence (Zakariya 2014). However, Egyptian women are standing up for social justice and against organized sexual terrorism. In February 2013, Egyptian women from all social backgrounds gathered in a one million march against increasing instances of sexual harassment of female protesters, raising the slogan 'Egypt: Keeping Women Out'. There are multiple feminist movements in Egypt (Zakariya 2014), and millions of Egyptians believe that the revolution continues. It is clear that while Egypt is in transition, women are fighting for rights and women's rights are at the center of the debate.

My findings contribute to the literature on gender dynamics in Egypt. My findings show that women's household control improved slightly in 2012, a short time after the initial uprisings and most notably, women were participating in more decisions with men. These findings align with other work that has shown that the 2011 Egyptian uprisings have reduced the gender gap in labor force participation and that the revolution might provide leeway to break the longstanding prevailing social and cultural norms towards women's work (Mallakh, Maurel and Speciale 2014). However, there are several important caveats for my findings. First, this could just be a trend over time. Given that I have no measure of 'uprising' or 'revolution', it is hard to credit the

improvement in women's autonomy to the revolutionary changes in Egypt. Second, there were other important factors in women's lives that contributed to improvements in autonomy like duration of marriage and separation from spouses either through divorce or widowhood. However, even when accounting for community level variation, the regional differences do show that women have the most autonomy in Cairo and Alexandria where most of the revolutionary activity was centered. Women continue to have the least autonomy in rural areas and in Upper Egypt. Lastly, since Egypt is continuing to change politically and socially, the improvements could be temporary and the data need to cover a longer period of time in order to more accurately explain social changes.

Discovering long-term effects of determinants on autonomy requires us to take seriously the notion that contextual exposures are continuous and dynamic, and to follow individuals' household and community environments through the course of their whole lives. The models I present here take a step in the direction of the life course perspective by including longitudinal data over a period of time, but the data may not cover a long enough period. Egypt is in transition and the changes in autonomy between 2006 and 2012 suggest that women's autonomy will continue to change in the next ten to twenty years.

7.3c Autonomy and Fertility

The relationship between autonomy and fertility in Egypt has significant public health implications. First, this relationship goes in both directions: women with more births are more autonomous over time. Second, the relationship between autonomy and births is not in the expected direction: more autonomous women have more births. These findings demonstrate the complexity of the relationship between autonomy and fertility, the importance of looking at the

relationship between autonomy and fertility longitudinally, and the dynamic nature of women's autonomy across the life course and in response to reproductive events.

More autonomous women use contraceptives and have lower fertility (Jejeebhoy 1995; Mason and Smith 2000). However, my findings show that while autonomy leads to greater contraceptive use, it also leads to higher fertility for more autonomous women. These findings can be explained in a few ways. Perhaps, just as currently available measures of women's autonomy, like household decision-making, were inconsistently associated with desires for smaller family sizes and deemed inappropriate for sub-Saharan Africa (Upadhyay and Karasek 2012), the same is true of women in Egypt. Furthermore, the capacity to decide in particular household situations might be very different from the capacity to decide major life issues (e.g. whether to be a mother). Women could be autonomous in one capacity, but not autonomous in relation to fertility decisions. My findings also show that it is important to think about what dimensions of autonomy affect childbearing within a society. For example, in Egypt, women with more egalitarian gender attitudes have fewer children over time. However, women who made more decisions had more children over time. Information on fertility decision-making and attitudes could provide further insights into these pathways.

Another link between autonomy and fertility comes from research on domestic violence. More autonomous women who violate established norms concerning general roles incur a higher risk of domestic violence (Koenig et al. 2006). Similarly, there could be a higher expectation for more autonomous women to fulfill household and social expectations of having children. Preferences for cultural norms of having more children can also be just as autonomous as preferences to repudiate these norms. Additionally, in settings like Egypt, where women have limited access to other channels of security, children are of greater value for their mothers'

current and future security (El-Zeini 2008). Women could be opting to have more children as a means of social and household gains. My findings that women with more births have more autonomy over time provide further support for this link between autonomy and fertility. My supplemental analyses also suggest that more autonomous women may be delaying childbearing, which would be expected if autonomous women have competing demands on their time like education and employment.

My results suggest that the community context in which women live may be more influential on fertility than their own specific autonomy. In Egypt, women's public behavior has strong implications for family reputation and honor; therefore, reproductive events are likely to be influenced by community-specific norms. Patriarchy and development exert a major influence on regional variations in fertility (Malhotra et al. 1995). Gender relations and gender value systems have long been conceptualized as major determinants of attitudes concerning fertility, but their impact depends on other contextual factors (Amin and Lloyd 2002b; Kravdal 2001; McDonald 2000; Morgan et al. 2002). Oppressive contexts often truncate the range of options that girls consider to be viable, thus interfering with their autonomy in major life choices like motherhood. Residents of Upper Egypt, even when they accept the notion of a two-child family, are less likely than those living elsewhere to profess a preference for it (El-Zeini 2008).

Despite the relationship with autonomy, residents of communities in Upper Egypt are also more likely to have more births over time. Importantly, Egypt between 2006 and 2012 was experiencing an economic downturn, and there were even more constrained economic opportunities for women and families country-wide. Children provide security for women in the midst of the instability and provide a sense of purpose in the household. This could be the case in Upper Egypt where there are very few economic opportunities. Examining the relationship

between autonomy and fertility in this modern period in Egypt is particularly important because the fertility transition has stalled and the status of women is in flux.

7.3d Theoretical Implications

This work was informed by the Theory of Gender and Power and the Life Course Perspective. As explained in Chapter Two, the Theory of Gender and Power is a relational theory - a theory that understands gender in relation to economics and power and operating at multiple levels from individual to interpersonal to social. Central to the theory is that analysis of gender and gender-related issues are the three part structural model including divisions of labor, power, and cathexis (affective attachments like social norms). Importantly, these structures exist at multiple levels and are maintained by social mechanisms. The theory acknowledges that gender inequalities change over time, as actors and institutions change. A change in one dimension of gender may happen in a different direction or at a different pace from a change in another direction. This study recognizes that the everyday social practices of gender like divisions of labor, household behaviors and control, and child rearing are not random, and they occur within a dense social fabric of institutions and ties.

My Aim 1 and 2 results support the Theory of Gender and Power in three ways: (1) women's position in the household and community affect autonomy, (2) dimensions of autonomy act in different ways, and (3) women's autonomy changes over time. Both my cross sectional and longitudinal analysis of autonomy support the idea that women are not just individual actors, but are part of a greater social system of household and communities, which affects their ability to exert control. Women are situated within their families and social settings in Egypt, thus, capturing part of the variation in women's autonomy beyond that which individual factors contribute. Applying the Theory of Gender and Power can be challenging, as

the social structures are abstract and difficult to operationalize. It can be hard to isolate and quantify the influence of a particular social structure on women's health. However, this study shows that in Egypt, variation in women's autonomy is based on determinants that affect women's status from the individual level to the community level. In Egypt, women have little autonomy over time because of social structures and processes that place them at a relative disadvantage. This aligns with the theoretical notion that multiple aspects of society affect women's position and health risk in that society.

My results also support the Theory of Gender and Power by reinforcing the notion that autonomy is multidimensional and an attribute of women's lives separate from women's status. I also operationalize autonomy in multiple ways, recognizing, as the Theory of Gender and Power asserts, that changes in one dimension of autonomy may happen in a different direction or at a different pace than changes in another dimension. Results show that determinants of autonomy-related attitudes can be different from behavioral measures of autonomy. Furthermore, women can have autonomy related to one aspect of their lives, while not having autonomy in another aspect. For example, women may be able to leave the house and have mobility, but have very little decision-making capability within the home.

This work further supports the theory by through a longitudinal analysis, which allows for changes in autonomy over time. The Theory of Gender and Power allows for changes in women's autonomy depending on how actors and institutions change at various levels over time. I consider a six-year time period in Egypt, where there is an economic downturn and a considerable amount of social change. My analysis accounts for the possibility that these changes affect autonomy over time. My results show that there are different determinants of autonomy

over time as compared to one point in time. This supports the life course perspective and provides further evidence in support of the Theory of Gender and Power.

For Aim 3 and the relationship between autonomy and fertility, I hypothesized that the greater autonomy women have, the fewer children they will have. My results show the opposite. However, this finding is not necessarily contrary to the Theory of Gender and Power. According to the Theory of Gender and Power, the greater a power imbalance in favor of men, the greater disadvantage for women and subsequently greater risk. If risk is defined as have a greater number of children, this study shows that women with more household control have greater risk. However, it is important to remember the structure of cathexis and the idea that people have biases about how men and women should express their sexuality. This might influence one's perceptions of risk.

In the Egyptian context, family and relationships are highly influential and family and social expectations of fertility are very likely to influence women's behavior. If it is socially normative for women to have more children and women with more control are having more children, this aligns with the Theory of Gender and Power. Perhaps having more children is actually the autonomous choice. If having more children is not the autonomous choice, the theory is also supported as the main point of the theory is that several aspects of women's lives affect and constrain her role within society. The theory asserts and this study demonstrates that there is a complex interplay between gender and power beyond the individual determinants. This study shows that various individual, household, and social aspects of women's lives constrain their household autonomy and fertility.

7.3e Public Health Implications

The findings from this dissertation can be used to inform both future public health and demographic research and prevention/intervention practices. This dissertation highlights four important implications for research and practice: (1) better conceptualization of autonomy using multiple measures over time, (2) a focus on women and households in Egypt during a crucial period in time, (3) the bi-directionality of the relationship between autonomy and fertility, and (4) the importance of communities for women in Egypt.

Findings indicate that autonomy is an attribute of women's lives that is not necessarily equivalent to women's status, determinants of autonomy vary, and that autonomy can change over the life course. This shows the importance of conceptualizing and measuring what is actually meant by the term 'autonomy' and that strategies to promote autonomy must seriously consider what aspects of control in women's lives and place in the life course are being targeted. Promotion of women's joint decisions in the household would require a different approach from financial autonomy. Results also show that measures of autonomy, while seemingly vague, are robust across samples and data sources. This is promising for research on decision-making, which has always been viewed as a less consistent outcome.

Findings also indicate that the status of women in Egypt is in transition. While there were some improvements in 2012, overall, women continue to have little autonomy across measures. Whether women should be more autonomous is a contested issue in Egyptian society, and an issue at the forefront of social change in Egypt. While this study covers a short period of time for women in Egypt, it begins to show the various factors that affect women's lives within households in Egypt. This can be a catalyst for further research on women in Egypt as the country continues to go through social and political changes.

My findings also show that it is important to think about what dimensions of autonomy affect childbearing for women within transitional Egypt. Also, the relationship between autonomy and fertility can go both ways, which further demonstrates the complexity of this relationship. It also shows that researchers should be cautious of cross sectional analyses of autonomy and fertility and purposeful in how autonomy is defined and measured. This study begins to show that in Egypt, children might provide women some household gains and a means of exercising more control in the household especially when their mobility and presence outside of the household is severely limited.

Findings indicate that communities are consequential to women's autonomy and fertility. This highlights the need for investing in "upstream interventions" focused on both: (a) developing economic and social capital in impoverished communities, and (b) changing gender norms surrounding women in communities in Egypt. Based on my results, I can argue that the means of facilitating women's autonomy are more complex than traditional economists contend. To promote female autonomy, greater attention needs to be paid to how women operate in their communities and households.

Community level interventions are likely to be the most effective. That said, my results show that improvements in women's status require intervention at multiple levels from the individual to the community because there are factors that affect women at each of these levels. These findings align with work that suggests strategies to enhance women's autonomy need to expand beyond education, employment, and delayed marriage (Boateng et al. 2012; Jejeebhoy and Sathar 2001; Uthman et al. 2009). The social determinants of health, such as gender inequalities, much also continue to be addressed. More comprehensive, direct, and context-specific strategies, including raising women's gender consciousness, enabling women to

mobilize and access community resources and public services, providing support for challenging traditional norms that underlie gender inequities, and enhancing women's access to and control over economic resources, to increase women's autonomy must simultaneously be sought.

7.4 Strengths and Limitations

7.4a Limitations

This study has several important overall limitations. There are a few limitations to using the ELMPS to model autonomy and fertility over the life course. While the ELMPS has extensive data on work and fertility history, the data does not include information on women's contraceptive behavior, fertility intentions, or sexual behavior. Some additional variables that may be associated with autonomy were also not available. These include poverty-induced stress among men, men's ideals about their familial roles, exposure of either partner to domestic violence in childhood, and chronic use of drugs or alcohol by either partner. Having access to this information over time would help clarify the pathway that determines autonomy and link autonomy and fertility over time.

There are also few limitations related to measures. Unfortunately, the measures of gender norms and attitudes towards domestic violence were not included in the 2012 ELMPS data, which limits the ability to look at the attitudinal measures over time. While this study uses several measures of autonomy, there are other measures about women's personal control, like Rotter's locus of control scale, that are not available in the data (Ross and Mirowsky 2013). My measures of autonomy do not necessarily quantify all power dynamics within a married relationship. Having a final say in household decisions or more freedom of movement may have its own cost in other aspects of the married relationship. Additionally, the men within the household were not administered the questions about women's autonomy; therefore, the responses are all based on the women's perspective of the household. Women's reports of

personal control have been found to be an accurate representation, but there is a risk of social desirability bias (Jejeebhoy 2002). Women for whom I did not have complete data due to missing items were also dropped from the analysis, which could influence the results.

Another limitation is the conceptualization of community. For this analysis, the PSU was used as a proxy for the respondent's community. This is a geographic representation of community, which may or may not correspond to the social dynamic of community in its entirety. However, given the paucity of standardized data collected at the community level, using the PSU as a measure of community is the best approximation available. The results highlight the need to collect data at the community level instead of relying on geographic definitions of community. The relationship between communities and autonomy may also be due to the non-random selection of individuals into communities and not because of community influences. I did not have a measure of length of time that respondents lived in their communities and the extent of their exposure to the community environment.

Gender inequality at different levels of social lives may independently or interactively affect women's autonomy. Although I adjusted for community level variation, I lacked data on gender inequities at that level (e.g. patriarchal culture). My findings would have been strengthened if women's status data were available on communities, institutions, or regions.

7.4.2 Strengths

The Egyptian Labor Market Panel Survey is a national probability sample of women. The data are recent and cover a wide range of information about key constructs related to women's status and autonomy before and after the initial Arab Spring uprisings. With the addition of the Egyptian Demographic and Health Survey, I validate determinants of autonomy over two data

sources and consider the relationship between autonomy and contraceptive use. The findings are generalizable for women of reproductive age (between the ages of 15 and 49) in Egypt.

This research also uses a range of measures to operationalize autonomy, recognizing that each captures something different about a woman's experience. From a theoretical point of view, the results of this paper underline the importance of choosing appropriate measures of female autonomy (Mahmud et al. 2012). Results confirm that autonomy does not necessarily occur simultaneously across different dimensions or measures of autonomy. It is possible for a woman to have greater value to the household in terms of joint decision-making without necessarily having greater independence from men (mobility and access to financial resources). I consider the status of women in transitional Egypt, and take seriously the call for research on women's autonomy to disentangle the relationship between status and autonomy. I examine multilevel determinants of various dimensions of women's autonomy, and focus on changes in women's autonomy during the turbulent contemporary period in Egypt. Disentangling autonomy from women's status helps clarify the pathway between demographic variables and personal control.

This research is the first to use a multilevel approach to consider pathways that can explain female autonomy for a large, nationally representative sample of Egyptian women. One of its strengths is its multilevel design, which allows us to discern the contextual effect of communities on autonomy, after taking into account individual and household characteristics. In addition, multilevel analysis enables us to determine the joint influence of communities, households, and individual characteristics on women's autonomy and fertility.

This research is also guided by the theory of gender and power and the life course perspective, and considers what events in women's lives shape their autonomy and their fertility, hypothesizing relationships at each step. This is a unique opportunity to provide a comprehensive

assessment of the status of women in Egypt in the last 10 years. Little attention has been directed towards investigating women's autonomy in contexts outside of south Asia. Addressing this research gap is a major strength of this study, and the findings constitute a valuable contribution to the research literature.

7.5 Conclusion

Improving women's status is a global health priority. By using a longitudinal data set, this study makes significant contributions to research on women's autonomy and fertility in Egypt. This study advances understanding of the relationships between autonomy, contraceptive use, and fertility, highlighting the importance of households and communities in determining autonomy and fertility for a large sample of women in Egypt. Understanding the relative contribution of individual, household, and community factors is important for researchers and policy makers. Women's autonomy is a process occurring in women's daily lives, but also a process occurring over time in society. The existence of community variation in female autonomy and fertility highlights the need for strategies to improve women's autonomy and reduce fertility to be geared not only towards individuals, but also to community norms. Study findings can contribute to interventions and policies on women's status in Egypt. Understanding women's experiences of autonomy and its effects is a crucial early step in making advances in gender equity in Egypt.

Appendix

Chapter 4 Appendix Tables

Table 4A.1 Autonomy - Gender Role Attitude Correlation Matrix for Ever Married Women Ages 15 to 49 at Wave II, 2006 Egyptian Labor Market Panel Survey N=6,534

Key Variables	A	B	C	D	E	F	G	H	I	J	H
A. Should Work	1.000										
B. Husband help with Kids	0.498	1.000									
C. Husband help with Chores	0.364	0.616	1.000								
D. Pity 30 year old single women	0.088	0.112	0.118	1.000							
E. Girls should get jobs	0.184	0.182	0.151	0.060	1.000						
F. Women who work are bad mothers	0.300	0.231	0.170	0.113	-0.069	1.000					
G. Financial autonomy means individual earnings	0.238	0.162	0.133	0.049	0.257	0.021	1.000				
H. Women's work interferes with marital life	0.302	0.233	0.138	0.125	-0.048	0.610	0.042	1.000			
I. Women should be leaders	0.451	0.378	0.315	0.123	0.097	0.229	0.247	0.211	1.000		
J. Boys and girls same schooling	0.273	0.224	0.183	0.033	0.077	0.188	0.108	0.173	0.328	1.000	
H. Boys and girls treated equally	0.198	0.220	0.185	0.074	0.070	0.131	0.025	0.135	0.189	0.535	1.000

Table 4A.2 Autonomy - Mobility Correlation Matrix for Ever Married Women Ages 15 to 49 at Wave II, 2006 Egyptian Labor Market Panel Survey N=6,534

Key Variables	A	B	C	D
A. Local Market	1.000			
B. Local Health Center	0.336	1.000		
C. Homes of Relatives or Friends in Neighborhood	0.346	0.679	1.000	
D. Take Children to Health Center	0.282	0.490	0.513	1.000

Table 4A.3 Autonomy - Domestic Violence Attitudes Correlation Matrix for Ever Married Women Ages 15 to 49 at Wave II, 2006 Egyptian Labor Market Panel Survey N=6,534

Key Variables	A	B	C	D	E	F	G
A. If she Burns Food	1.000						
B. If she Neglects Children	0.476	1.000					
C. If she Argues with Him	0.384	0.573	1.000				
D. If she Talks to Other Men	0.386	0.510	0.606	1.000			
E. If she Wastes Money	0.438	0.556	0.529	0.594	1.000		
F. If she Refuses Him Sex	0.380	0.453	0.469	0.488	0.528	1.000	
G. Afraid of disagreeing with Husband	0.142	0.128	0.137	0.184	0.141	0.167	1.000

Table 4A.4 Multilevel Ordinary Least Squares and Logistic Regression Models Predicting Women's Household Decision-Making, Married Women Ages 15 to 49 at Wave II, 2006 Egyptian Labor Market Panel Survey N=5,740

Key Variables	Individual Decision-Making		Joint Decision-Making		Combined Decision-Making	
	OLS					
	b	(SE)	b	(SE)	b	(SE)
Age (yrs)	0.045***	(0.0065)	0.0061	(0.0080)	0.051***	(0.0080)
Education (Ref=Primary)						
None	-0.041	(0.11)	-0.25	(0.14)	-0.27*	(0.14)
Preparatory	0.10	(0.15)	0.041	(0.18)	0.15	(0.18)
Secondary	-0.35	(0.27)	0.30	(0.33)	-0.025	(0.33)
Technical Secondary	0.10	(0.11)	0.057	(0.14)	0.17	(0.14)
Intermediate or Higher	0.033	(0.14)	0.21	(0.17)	0.25	(0.17)
Mother's Education (Ref=Primary)						
None	-0.055	(0.24)	0.21	(0.30)	0.12	(0.30)
Preparatory or Higher	-0.12	(0.075)	0.26**	(0.092)	0.12	(0.093)
Older than 18 at First Marriage	-0.16*	(0.073)	0.044	(0.090)	-0.11	(0.090)
Dowry (Ref=None)						
No Response	0.11	(0.088)	-0.017	(0.10)	0.14	(0.10)
Some	0.13	(0.071)	-0.052	(0.086)	0.10	(0.086)
Marriage Process Duration (Months)	0.0016	(0.0021)	0.0060*	(0.0025)	0.0078**	(0.0025)
Related to Husband	-0.018	(0.061)	0.027	(0.075)	-0.0083	(0.075)
Ever Worked	0.086	(0.11)	0.27*	(0.13)	0.40**	(0.13)
Employment (Ref=Employed)						
Unemployed	-0.015	(0.17)	0.40	(0.21)	0.40	(0.21)
Retired	-0.080	(0.12)	-0.072	(0.15)	-0.13	(0.15)
Birth Setting: Urban	0.14	(0.087)	0.012	(0.11)	0.14	(0.11)
Region (Ref=Greater Cairo)						
Alexandria & Suez Canal	-0.61***	(0.18)	0.20	(0.19)	-0.45*	(0.18)
Urban Lower	0.072	(0.18)	-0.91***	(0.19)	-0.85***	(0.18)
Urban Upper	-1.02***	(0.18)	-0.14	(0.19)	-1.21***	(0.18)
Rural Lower	0.13	(0.17)	-0.92***	(0.18)	-0.81***	(0.18)
Rural Upper	-1.03***	(0.18)	-0.67***	(0.20)	-1.76***	(0.19)
Household Wealth Index (Ref=Poorest)						
Poorer	-0.11	(0.091)	0.051	(0.11)	-0.067	(0.11)
Middle	-0.11	(0.097)	0.063	(0.12)	-0.064	(0.12)
Richer	-0.33**	(0.11)	0.27*	(0.13)	-0.077	(0.13)
Richest	-0.34**	(0.12)	0.40**	(0.14)	0.043	(0.14)
Household Size	-0.053***	(0.012)	0.036*	(0.014)	-0.017	(0.014)
Husband's Age (yrs)	0.0069	(0.0056)	-0.023**	(0.0069)	-0.015*	(0.0070)
Husband's Education (Ref=Primary)						
None	-0.020	(0.094)	-0.073	(0.12)	-0.10	(0.12)
Preparatory	-0.047	(0.14)	0.13	(0.17)	0.080	(0.17)
Secondary	-0.11	(0.30)	0.0096	(0.36)	-0.070	(0.37)
Technical Secondary	-0.092	(0.098)	0.12	(0.12)	0.031	(0.12)
Intermediate or Higher	-0.32**	(0.12)	0.32*	(0.14)	0.0052	(0.14)
Husband's Employment (Ref=Employed)						
Unemployed	-0.17	(0.26)	0.12	(0.32)	-0.045	(0.32)
Out of Labor Force	-0.052	(0.15)	-0.11	(0.19)	-0.16	(0.19)
Husband's Migration (Ref=No)						
No Response	0.0080	(0.084)	0.15	(0.10)	0.14	(0.10)
Yes	0.23*	(0.12)	0.24	(0.14)	0.47**	(0.15)
Variance at Level 1 (Individual Level)	1.94		2.41		2.43	
Variance of Region at Level 2 (PSU Level)	0.756		0.681		0.631	
ICC	0.132		0.073		0.063	

Notes: *p<0.05, ** p<0.01, *** p<0.001. Standard errors in parentheses

Table 4A.5 Incident Rate Ratios from Poisson Models Predicting Women's Autonomy, Ever-Married Women Ages 15 to 49, 2008 Egyptian Demographic and Health Survey (N=14,756)

Key Variables	EDHS 2008 Decision-Making		EDHS 2008 Joint Decision- Making		EDHS 2008 Domestic Violence Attitudes	
	IRR	(SE)	IRR	(SE)	IRR	(SE)
Age (yrs)	1.01**	(0.0021)	1.01***	(0.0014)	1.00	(0.0020)
Education (Ref=Primary)						
None	0.95	(0.063)	0.94	(0.034)	1.24***	(0.076)
Preparatory	0.93	(0.066)	1.04	(0.041)	1.14*	(0.075)
Secondary	1.07	(0.075)	1.03	(0.037)	0.86*	(0.061)
Technical Secondary	1.04	(0.069)	1.10**	(0.039)	0.65***	(0.044)
Intermediate or Higher	1.06	(0.090)	1.10*	(0.045)	0.42***	(0.048)
Older than 18 at First Marriage	1.02	(0.028)	1.00	(0.017)	0.94*	(0.025)
Ever Worked	1.08*	(0.037)	1.00	(0.017)	0.99	(0.042)
Christian	1.11	(0.062)	1.02	(0.030)	0.82*	(0.072)
Sons	1.11***	(0.035)	1.10***	(0.016)	0.93*	(0.027)
Birth Setting: Urban	0.56***	(0.058)	1.16*	(0.081)	1.09	(0.079)
Region (Ref=Greater Cairo)						
Urban Lower	0.82**	(0.055)	1.11***	(0.032)	1.27**	(0.11)
Urban Upper	1.09	(0.070)	0.88***	(0.027)	1.43***	(0.12)
Rural Lower	0.52***	(0.060)	1.26**	(0.093)	1.30**	(0.13)
Rural Upper	0.62***	(0.066)	0.92	(0.062)	1.87***	(0.17)
Household Wealth Index (Ref=Poorest)						
Poorer	1.03	(0.035)	1.01	(0.027)	0.88***	(0.031)
Middle	0.91*	(0.038)	1.10***	(0.030)	0.83***	(0.035)
Richer	0.88*	(0.045)	1.13***	(0.035)	0.64***	(0.038)
Richest	0.91	(0.052)	1.15***	(0.039)	0.42***	(0.034)
Household Size	0.99*	(0.0040)	0.99**	(0.0035)	1.02***	(0.0034)
Husband's Age (yrs)	1.00	(0.0016)	0.99***	(0.0011)	1.00	(0.0013)
Husband's Education (Ref=Primary)						
None	1.16**	(0.068)	0.85***	(0.027)	1.06	(0.054)
Preparatory	1.26***	(0.073)	0.97	(0.030)	1.04	(0.055)
Secondary	1.10	(0.069)	0.97	(0.029)	1.00	(0.057)
Technical Secondary	1.05	(0.058)	0.99	(0.027)	0.90	(0.047)
Intermediate or Higher	0.88	(0.061)	1.05	(0.033)	0.73***	(0.063)
Pseudo R-Squared	0.066		0.134		0.152	
BIC	34340.7		52195.7		44675.5	

Notes: *p<0.05, ** p<0.01, *** p<0.001. Standard errors in parentheses

Table 4.A6 Incident Rate Ratios from Poisson Models Predicting Women's Autonomy, Ever-Married Women Ages 15 to 49 at Wave II, 2006 Egyptian Labor Market Panel Survey (N=5,740) and in 2008 Egyptian Demographic and Health Survey (N=14,756)

Key Variables	ELMPS 2006 Decision-Making		EDHS 2008 Decision-Making		ELMPS 2006 Joint Decision-Making		EDHS 2008 Joint Decision- Making		ELMPS 2006 Domestic Violence Attitudes		EDHS 2008 Domestic Violence	
	IR	(SE)	IR	(SE)	IR	(SE)	IR	(SE)	IR	(SE)	IR	(SE)
	Poisson											
Age (yrs)	1.01***	(0.0033)	1.01***	(0.0021)	1.00	(0.0026)	1.01***	(0.0015)	1.01	(0.0034)	1.00	(0.0021)
Education (Ref=Primary)												
None	1.07	(0.060)	0.94	(0.062)	0.92	(0.041)	0.95	(0.038)	0.93	(0.051)	1.27***	(0.086)
Preparatory	1.05	(0.081)	0.92	(0.063)	0.97	(0.057)	1.05	(0.046)	0.99	(0.077)	1.17*	(0.085)
Secondary	0.77	(0.12)	1.04	(0.072)	1.17	(0.11)	1.03	(0.041)	0.91	(0.15)	0.86	(0.067)
Technical Secondary	1.02	(0.059)	1.02	(0.067)	1.02	(0.045)	1.09*	(0.043)	0.85**	(0.050)	0.66***	(0.049)
Intermediate or Higher	0.95	(0.066)	1.01	(0.084)	1.07	(0.055)	1.09	(0.050)	0.70***	(0.055)	0.43***	(0.053)
Older than 18 at First Marriage	0.95	(0.035)	1.01	(0.027)	0.99	(0.030)	1.00	(0.018)	0.95	(0.033)	0.95	(0.027)
Ever Worked	1.13***	(0.035)	1.07*	(0.036)	1.11***	(0.026)	0.99	(0.019)	1.06	(0.034)	1.00	(0.046)
Birth Setting: Urban	1.04	(0.043)	0.58***	(0.059)	1.03	(0.033)	1.20*	(0.089)	0.97	(0.045)	1.06	(0.088)
Region (Ref=Greater Cairo)												
Alexandria & Suez Canal	0.66***	(0.036)	-	-	1.03	(0.038)	-	-	0.46***	(0.040)	-	-
Urban Lower	0.94	(0.044)	0.83**	(0.056)	0.77***	(0.030)	1.08*	(0.036)	1.17**	(0.071)	1.37**	(0.14)
Urban Upper	0.48***	(0.027)	1.10	(0.070)	0.86***	(0.031)	0.84***	(0.028)	1.12	(0.067)	1.55***	(0.15)
Rural Lower	0.96	(0.049)	0.54***	(0.062)	0.81***	(0.033)	1.27**	(0.099)	1.25***	(0.078)	1.33*	(0.16)
Rural Upper	0.54***	(0.032)	0.62***	(0.066)	0.76***	(0.035)	0.91	(0.065)	1.39***	(0.091)	2.00***	(0.21)
Household Wealth Index (Ref=Poorest)												
Poorer	0.98	(0.045)	1.02	(0.035)	0.99	(0.038)	1.02	(0.030)	0.86***	(0.035)	0.87***	(0.034)
Middle	0.94	(0.045)	0.91*	(0.037)	1.01	(0.040)	1.13***	(0.036)	0.86***	(0.038)	0.81***	(0.038)
Richer	0.84**	(0.044)	0.87**	(0.044)	1.08	(0.045)	1.17***	(0.041)	0.77***	(0.040)	0.61***	(0.040)
Richest	0.82***	(0.047)	0.91	(0.052)	1.13**	(0.051)	1.19***	(0.047)	0.62***	(0.039)	0.38***	(0.034)
Household Size	0.96***	(0.0062)	0.99	(0.0039)	0.99**	(0.0047)	0.99*	(0.0036)	1.00	(0.0054)	1.01***	(0.0039)
Husband's Age (yrs)	1.00	(0.0028)	1.00	(0.0016)	0.99**	(0.0022)	0.99***	(0.0012)	1.00	(0.0029)	1.00	(0.0015)
Husband's Education (Ref=Primary)												
None	0.98	(0.046)	1.16**	(0.066)	0.99	(0.039)	0.84***	(0.030)	1.12*	(0.052)	1.08	(0.060)
Preparatory	1.00	(0.068)	1.26***	(0.071)	1.05	(0.057)	0.97	(0.034)	0.85*	(0.066)	1.05	(0.061)
Secondary	0.95	(0.14)	1.11	(0.068)	1.08	(0.12)	0.97	(0.033)	0.91	(0.16)	1.00	(0.065)
Technical Secondary	1.00	(0.049)	1.06	(0.059)	1.05	(0.041)	0.99	(0.030)	0.93	(0.048)	0.91	(0.053)
Intermediate or Higher	0.90	(0.053)	0.90	(0.062)	1.12**	(0.050)	1.07	(0.037)	0.81**	(0.053)	0.76**	(0.070)
Pseudo R-squared	0.0461		0.0637		0.03		0.1174		0.0618		0.1453	
BIC	14367.9		33284.6		18197.7		47333.7		15479.4		36248.1	

Notes: *p<0.05, ** p<0.01, *** p<0.001. Standard errors in parentheses

Chapter 5 Appendix Tables

Table 5A.1 Autonomy - Mobility Correlation Matrix for Women Ages 15 to 49 at Wave III, 2012 Egyptian Labor Market Panel Survey N=8,719

Key Variables	A	B	C	D
A. Local Market	1.000			
B. Local Health Center	0.4653	1.000		
C. Homes of Relatives or Friends in Neighborhood	0.4481	0.8129	1.000	
D. Take Children to Health Center	0.3844	0.5266	0.5692	1.000

Table 5A.2 Distribution of Joint Participation in Household Decision-Making, Women ages 15 to 49 years old at Wave III, 2012 Egyptian Labor Market Panel Survey N=8,719

Count	Frequency	Percent
0	1971	22.61
1	871	9.99
2	881	10.1
3	924	10.6
4	952	10.92
5	880	10.09
6	801	9.19
7	470	5.39
8	534	6.12
9	119	1.36
10	316	3.62
Total	8719	100

Table 5A.3 Distribution of Women's Participation in Household Decision-Making, Women ages 15 to 49 years old at Wave III, 2012 Egyptian Labor Market Panel Survey N=8,719

Count	Frequency	Percent
0	2593	29.74
1	1140	13.07
2	1191	13.66
3	995	11.41
4	798	9.15
5	601	6.89
6	485	5.56
7	315	3.61
8	216	2.48
9	158	1.81
10	227	2.6
Total	8719	100

Table 5A.4 Multilevel Ordinary Least Squares Models Predicting Women's Household Decision Making, Married Women Ages 15 to 49 at Wave III, 2012 Egyptian Labor Market Panel Survey

Key Variables	Individual Decision-Making N=7,620		Joint Decision-Making N=7,620		Combined Decision-Making N=7,620	
	b	(SE)	b	(SE)	b	(SE)
Age (yrs)	0.060***	(0.0072)	0.027**	(0.0091)	0.087***	(0.0088)
Education (Ref=Primary)						
None	-0.18	(0.10)	-0.029	(0.13)	-0.21	(0.13)
Preparatory	0.061	(0.13)	-0.20	(0.16)	-0.16	(0.16)
Secondary	-0.019	(0.17)	0.17	(0.21)	0.15	(0.21)
Technical Secondary	0.15	(0.10)	0.15	(0.13)	0.28*	(0.13)
Intermediate or Higher	-0.11	(0.13)	0.34*	(0.16)	0.22	(0.15)
Mother's Education (Ref=Primary)						
None	-0.32	(0.20)	0.26	(0.26)	-0.087	(0.25)
Preparatory or Higher	0.014	(0.071)	-0.026	(0.090)	-0.0091	(0.087)
Older than 18 at First Marriage	-0.17*	(0.072)	-0.062	(0.091)	-0.23**	(0.088)
Dowry (Ref=None)						
No Response	-0.0091	(0.11)	0.11	(0.14)	0.091	(0.14)
Some	-0.12	(0.070)	0.31***	(0.087)	0.16	(0.084)
Marriage Process Duration (Months)	0.00023	(0.0023)	0.0026	(0.0029)	0.0026	(0.0029)
Related to Husband (Ref=No)						
No Response	-0.80***	(0.15)	-0.23	(0.19)	-1.03***	(0.19)
Yes	0.0066	(0.061)	-0.0070	(0.078)	-0.0048	(0.075)
Ever Worked	0.23*	(0.090)	0.065	(0.11)	0.32**	(0.11)
Employment (Ref=Employed)						
Unemployed	0.20	(0.13)	-0.19	(0.17)	0.035	(0.16)
Retired	-0.11	(0.11)	0.012	(0.13)	-0.076	(0.13)
Birth Setting: Urban	0.22*	(0.093)	-0.0073	(0.12)	0.21	(0.11)
Region (Ref=Greater Cairo)						
Alexandria & Suez Canal	-0.29	(0.17)	0.13	(0.19)	-0.17	(0.19)
Urban Lower	-0.56***	(0.16)	0.40*	(0.18)	-0.18	(0.18)
Urban Upper	-1.34***	(0.16)	0.019	(0.18)	-1.33***	(0.18)
Rural Lower	-0.64***	(0.16)	0.56**	(0.18)	-0.089	(0.18)
Rural Upper	-1.19***	(0.17)	-0.37	(0.19)	-1.55***	(0.19)
Household Wealth Index (Ref=Poorest)						
Poorer	-0.14	(0.080)	0.11	(0.10)	-0.019	(0.099)
Middle	-0.28***	(0.085)	0.39***	(0.11)	0.11	(0.10)
Richer	-0.29**	(0.093)	0.46***	(0.12)	0.19	(0.11)
Richest	-0.27*	(0.11)	0.59***	(0.14)	0.33*	(0.13)
Household Size	0.018	(0.017)	-0.027	(0.021)	-0.0097	(0.021)
Husband's Age (yrs)	0.012*	(0.0052)	-0.0040	(0.0066)	0.0068	(0.0064)
Husband's Education (Ref=Primary)						
None	0.034	(0.092)	-0.040	(0.12)	-0.022	(0.11)
Preparatory	-0.027	(0.13)	0.25	(0.16)	0.23	(0.15)
Secondary	-0.40*	(0.18)	-0.027	(0.23)	-0.43	(0.23)
Technical Secondary	-0.24**	(0.087)	0.20	(0.11)	-0.046	(0.11)
Intermediate or Higher	-0.38***	(0.11)	0.30*	(0.13)	-0.081	(0.13)
Husband's Employment (Ref=Employed)						
Unemployed	-0.14	(0.18)	0.12	(0.23)	-0.028	(0.23)
Out of Labor Force	0.068	(0.17)	-0.56**	(0.21)	-0.48*	(0.21)
Husband's Religion (Ref=Muslim)	-0.27	(0.17)	0.34	(0.21)	0.058	(0.20)
BIC	33695.1		37202.5		36717.9	
Variance at Level 1 (Individual Level)	2.08		2.65		2.57	
Variance at Level 2 (PSU Level)	0.78		0.74		0.74	
ICC	0.09		0.08		0.08	

Notes: *p<0.05, ** p<0.01, *** p<0.001. Standard errors in parentheses

Table 5A.5 Ordinary Least Squares and Logistic Regression Models Predicting Women's Autonomy in 2012, Ever Married Women Ages 15 to 49 at Wave II, 2006 - 2012 Egyptian Labor Market Panel Survey

Key Variables	Individual Decision-Making 2012 N=5,210		Joint Decision-Making 2012 N=5,210		Mobility 2012 N=5,210		Financial Autonomy 2012 N=5,210	
	OLS						Logistic	
	b	(SE)	b	(SE)	b	(SE)	OR	(SE)
Respondent Household Decision Making 2006	0.21***	(0.020)	-0.0083	(0.021)	0.038***	(0.0067)	1.08***	(0.020)
Joint Household Decision Making 2006	0.11***	(0.017)	0.035*	(0.017)	0.0072	(0.0053)	1.06***	(0.015)
Mobility 2006	0.49***	(0.062)	0.011	(0.064)	0.13***	(0.020)	1.38***	(0.078)
Financial Autonomy 2006	0.17	(0.096)	-0.22*	(0.100)	-0.014	(0.032)	1.01	(0.088)
Attitudes toward Gender Norms 2006	-0.15*	(0.071)	0.095	(0.074)	-0.020	(0.023)	0.97	(0.060)
Attitudes towards Domestic Violence 2006	-0.011	(0.019)	0.026	(0.020)	0.015*	(0.0063)	1.01	(0.017)
Births in 2006	0.10***	(0.024)	0.067**	(0.024)	0.041***	(0.0089)	1.05*	(0.026)
Age (yrs)	-0.11***	(0.0061)	-0.11***	(0.006)	-0.011***	(0.0024)	1.01	(0.006)
Education (Ref=Primary)								
None	-0.19	(0.15)	-0.27	(0.16)	-0.094	(0.048)	0.91	(0.12)
Preparatory	-0.0092	(0.21)	-0.15	(0.22)	-0.079	(0.067)	1.19	(0.22)
Secondary	-0.40	(0.42)	0.067	(0.44)	-0.17	(0.14)	1.21	(0.46)
Technical Secondary	0.22	(0.16)	0.034	(0.16)	-0.0088	(0.049)	1.13	(0.15)
Intermediate or Higher	0.075	(0.19)	0.77***	(0.19)	-0.028	(0.060)	1.08	(0.18)
Mother's Education (Ref=Primary)								
None	-0.98*	(0.45)	0.28	(0.46)	-0.12	(0.14)	1.25	(0.50)
Preparatory or Higher	0.021	(0.11)	-0.17	(0.11)	-0.018	(0.035)	0.95	(0.091)
Separated (Ref=Married)	0.86***	(0.17)	-1.41***	(0.18)	0.074	(0.066)	1.71**	(0.34)
Older than 18 at First Marriage	0.17	(0.100)	0.21*	(0.10)	0.095**	(0.033)	1.04	(0.092)
Dowry (Ref=None)								
No Response	-0.051	(0.10)	0.040	(0.10)	0.031	(0.032)	1.05	(0.093)
Some	-0.14	(0.092)	0.14	(0.095)	0.014	(0.030)	1.11	(0.089)
Marriage Process Duration (Months)	-0.00068	(0.0030)	0.0089**	(0.0031)	0.000077	(0.00095)	1.00	(0.0026)
Related to Husband (Ref=No)								
No Response	0.0014	(0.084)	-0.058	(0.087)	-0.046	(0.027)	0.86*	(0.063)
Yes	0.43**	(0.16)	0.12	(0.17)	0.27***	(0.051)	1.85***	(0.27)
Ever Worked	0.15	(0.24)	0.30	(0.25)	0.16*	(0.075)	1.02	(0.21)
Employment (Ref=Employed)								
Unemployed	0.33	(0.17)	-0.0088	(0.18)	0.20***	(0.056)	1.19	(0.19)
Retired	-0.12	(0.12)	0.26*	(0.13)	0.0015	(0.040)	1.00	(0.11)
Birth Setting: Urban								
Region (Ref=Greater Cairo)								
Alexandria & Suez Canal	-0.34	(0.18)	0.25	(0.19)	-0.30***	(0.062)	0.78	(0.14)
Urban Lower	-0.78***	(0.16)	0.51**	(0.17)	-0.081	(0.056)	0.71*	(0.12)
Urban Upper	-1.12***	(0.16)	0.41*	(0.16)	-0.18***	(0.053)	0.35***	(0.054)
Rural Lower	-0.89***	(0.17)	0.80***	(0.18)	-0.028	(0.057)	0.56***	(0.092)
Rural Upper	-1.13***	(0.18)	-0.079	(0.19)	-0.23***	(0.061)	0.41***	(0.070)
Household Wealth Index (Ref=Poorest)								
Poorer	-0.19	(0.12)	-0.084	(0.13)	-0.085*	(0.039)	0.94	(0.099)
Middle	-0.24	(0.13)	-0.084	(0.13)	-0.044	(0.042)	0.99	(0.11)
Richer	-0.20	(0.14)	0.048	(0.15)	-0.11*	(0.046)	0.78*	(0.097)
Richest	-0.38*	(0.16)	-0.11	(0.16)	-0.12*	(0.052)	0.81	(0.11)
Household Size	-0.0027	(0.016)	0.0063	(0.016)	-0.0066	(0.0050)	0.94***	(0.013)
R-squared	0.149		0.164		0.085			
BIC	25370.8		25730.4		10493.7		10117.9	

Notes: *p<0.05, ** p<0.01, *** p<0.001. Standard errors in parentheses

Table 5A.6 Multilevel Ordinary Least Squares and Logistic Regression Models Predicting Women's Autonomy, Ever Married Women Ages 15 to 49 at Wave II, 2006 Egyptian Labor Market Panel Survey

Key Variables	Individual Decision-Making 2012 N=5,210		Joint Decision-Making 2012 N=5,210		Mobility 2012 N=5,210		Financial Autonomy 2012 N=5,210	
			OLS				Logistic	
	b	(SE)	b	(SE)	b	(SE)	OR	(SE)
Respondent Household Decision Making 2006	0.20***	(0.020)	-0.0092	(0.021)	0.036***	(0.0066)	1.08***	(0.021)
Joint Household Decision Making 2006	0.10***	(0.017)	0.035*	(0.017)	0.0067	(0.0053)	1.06***	(0.016)
Mobility 2006	0.46***	(0.062)	0.038	(0.064)	0.11***	(0.021)	1.32***	(0.078)
Financial Autonomy 2006	0.15	(0.097)	-0.18	(0.10)	-0.0046	(0.032)	1.00	(0.092)
Attitudes toward Gender Norms 2006	-0.12	(0.072)	0.047	(0.074)	-0.022	(0.023)	0.99	(0.065)
Attitudes towards Domestic Violence 2006	-0.010	(0.020)	0.017	(0.020)	0.013*	(0.0064)	1.00	(0.018)
Births in 2006	0.10***	(0.024)	0.063**	(0.024)	0.042***	(0.0088)	1.06*	(0.027)
Age (yrs)	-0.11***	(0.006)	-0.11***	(0.006)	-0.011***	(0.0024)	1.01	(0.007)
Education (Ref=Primary)								
None	-0.17	(0.15)	-0.32*	(0.15)	-0.074	(0.048)	0.91	(0.12)
Preparatory	0.0033	(0.21)	-0.23	(0.22)	-0.065	(0.066)	1.23	(0.23)
Secondary	-0.48	(0.42)	-0.035	(0.43)	-0.17	(0.14)	1.14	(0.45)
Technical Secondary	0.20	(0.15)	-0.035	(0.16)	-0.0097	(0.049)	1.11	(0.15)
Intermediate or Higher	0.059	(0.19)	0.70***	(0.19)	-0.041	(0.059)	1.04	(0.18)
Mother's Education (Ref=Primary)								
None	-1.01*	(0.45)	0.26	(0.46)	-0.097	(0.14)	1.21	(0.51)
Preparatory or Higher	0.030	(0.11)	-0.23*	(0.11)	-0.022	(0.035)	0.93	(0.092)
Separated (Ref=Married)	0.92***	(0.17)	-1.39***	(0.18)	0.094	(0.064)	1.78**	(0.36)
Older than 18 at First Marriage	0.14	(0.09)	0.20	(0.10)	0.091**	(0.033)	1.04	(0.096)
Dowry (Ref=None)								
No Response	-0.065	(0.11)	0.021	(0.12)	0.046	(0.038)	1.06	(0.11)
Some	-0.15	(0.096)	0.080	(0.100)	0.014	(0.032)	1.10	(0.098)
Marriage Process Duration (Months) Related to Husband (Ref=No)	-0.00024	(0.003)	0.0082**	(0.0031)	-0.0055	(0.00095)	1.00	(0.0027)
No Response	0.0013	(0.084)	-0.051	(0.086)	-0.034	(0.027)	0.87	(0.067)
Yes	0.39*	(0.16)	0.13	(0.16)	0.24***	(0.051)	1.70***	(0.26)
Ever Worked								
Employment (Ref=Employed)								
Unemployed	0.13	(0.24)	0.32	(0.25)	0.13	(0.073)	0.92	(0.20)
Retired	0.29	(0.17)	-0.018	(0.18)	0.17**	(0.055)	1.08	(0.18)
Birth Setting: Urban	-0.087	(0.12)	0.22	(0.13)	0.017	(0.040)	1.03	(0.12)
Region (Ref=Greater Cairo)								
Alexandria & Suez Canal	-0.34	(0.21)	0.24	(0.23)	-0.29***	(0.076)	0.74	(0.16)
Urban Lower	-0.72***	(0.19)	0.45*	(0.21)	-0.065	(0.071)	0.73	(0.15)
Urban Upper	-1.06***	(0.19)	0.36	(0.21)	-0.17*	(0.068)	0.34***	(0.065)
Rural Lower	-0.84***	(0.19)	0.79***	(0.21)	-0.027	(0.068)	0.56**	(0.11)
Rural Upper	-1.10***	(0.21)	-0.13	(0.22)	-0.22**	(0.073)	0.41***	(0.084)
Household Wealth Index (Ref=Poorest)								
Poorer	-0.19	(0.12)	-0.058	(0.12)	-0.075	(0.039)	0.95	(0.11)
Middle	-0.23	(0.13)	-0.041	(0.13)	-0.022	(0.042)	1.02	(0.12)
Richer	-0.18	(0.14)	0.066	(0.15)	-0.089	(0.046)	0.78	(0.10)
Richest	-0.37*	(0.16)	-0.070	(0.17)	-0.11*	(0.053)	0.83	(0.13)
Household Size	-0.00037	(0.016)	0.012	(0.016)	-0.0034	(0.0050)	0.94***	(0.013)
BIC	25352.8		25689.9		10427.6		5562.2	
Variance at Level 1 (Individual Level)	2.64		2.72		0.769			
Variance at Level 2 (PSU Level)	0.488		0.585		0.202		0.48	
ICC	0.09		0.08		0.11		0.14	

Notes: *p<0.05, ** p<0.01, *** p<0.001. Standard errors in parentheses

Table 5A.7 Multilevel OLS Models Predicting Women's Household Decision Making in 2012, Married Women Ages 15 to 49 with Spouses at Wave II (N=4,575), 2006 - 2012 Egyptian Labor Market Panel Survey

Key Variables	Individual Decision-Making 2012 N=4,575		Joint Decision-Making 2012 N=4,575		Combined Decision-Making 2012 N=4,575	
	OLS					
	b	(SE)	b	(SE)	b	(SE)
Respondent Household Decision Making						
2006	0.15***	(0.022)	0.034	(0.024)	0.18***	(0.027)
Joint Household Decision Making 2006	0.12***	(0.016)	0.021	(0.018)	0.14***	(0.020)
Mobility 2006	0.47***	(0.066)	0.041	(0.073)	0.51***	(0.080)
Financial Autonomy 2006	0.15	(0.10)	-0.17	(0.11)	-0.027	(0.12)
Attitudes toward Gender Norms 2006	-0.11	(0.072)	0.050	(0.081)	-0.055	(0.088)
Attitudes towards Domestic Violence 2006	-0.012	(0.020)	0.033	(0.022)	0.021	(0.024)
Births in 2006	0.11***	(0.025)	0.067*	(0.027)	0.17***	(0.030)
Age (yrs)	-0.11***	(0.0099)	-0.12***	(0.011)	-0.23***	(0.012)
Education (Ref=Primary)						
None	-0.13	(0.15)	-0.32	(0.17)	-0.45*	(0.19)
Preparatory	-0.0012	(0.21)	-0.23	(0.23)	-0.23	(0.26)
Secondary	-0.43	(0.41)	-0.18	(0.45)	-0.60	(0.50)
Technical Secondary	0.36*	(0.16)	-0.15	(0.18)	0.21	(0.20)
Intermediate or Higher	0.35	(0.20)	0.50*	(0.22)	0.85***	(0.24)
Mother's Education (Ref=Primary)						
None	-0.74	(0.46)	0.29	(0.51)	-0.45	(0.56)
Preparatory or Higher	-0.015	(0.11)	-0.18	(0.12)	-0.20	(0.13)
Older than 18 at First Marriage	0.21*	(0.10)	0.27*	(0.11)	0.47***	(0.12)
Dowry (Ref=None)						
No Response	-0.081	(0.11)	0.0079	(0.13)	-0.075	(0.14)
Some	-0.18	(0.098)	0.098	(0.11)	-0.084	(0.12)
Marriage Process Duration (Months) Related to Husband (Ref=No)	-0.00061	(0.0030)	0.0078*	(0.0033)	0.0072*	(0.0037)
Ever Worked	0.23	(0.16)	0.24	(0.18)	0.47*	(0.20)
Employment (Ref=Employed)						
Unemployed	-0.11	(0.24)	0.52	(0.27)	0.40	(0.30)
Retired	0.19	(0.17)	0.086	(0.19)	0.27	(0.21)
Birth Setting: Urban	-0.0030	(0.12)	0.18	(0.14)	0.18	(0.15)
Region (Ref=Greater Cairo)						
Alexandria & Suez Canal	-0.40	(0.22)	0.19	(0.25)	-0.22	(0.27)
Urban Lower	-0.74***	(0.21)	0.53*	(0.24)	-0.21	(0.25)
Urban Upper	-1.24***	(0.20)	0.39	(0.23)	-0.84***	(0.25)
Rural Lower	-0.84***	(0.20)	0.72**	(0.23)	-0.12	(0.25)
Rural Upper	-1.21***	(0.22)	-0.12	(0.25)	-1.32***	(0.27)
Household Wealth Index (Ref=Poorest)						
Poorer	-0.12	(0.12)	-0.10	(0.14)	-0.23	(0.15)
Middle	-0.14	(0.13)	-0.11	(0.15)	-0.25	(0.16)
Richer	-0.22	(0.15)	0.054	(0.16)	-0.17	(0.18)
Richest	-0.31	(0.17)	-0.20	(0.19)	-0.51*	(0.20)
Household Size	-0.00050	(0.016)	0.021	(0.018)	0.020	(0.020)
Husband's Age (yrs)	0.014	(0.0081)	-0.0064	(0.0090)	0.0073	(0.0098)
Husband's Education (Ref=Primary)						
None	0.17	(0.13)	-0.29*	(0.15)	-0.13	(0.16)
Preparatory	0.085	(0.20)	0.0060	(0.22)	0.088	(0.24)
Secondary	0.11	(0.45)	0.21	(0.50)	0.31	(0.54)
Technical Secondary	-0.024	(0.14)	-0.14	(0.15)	-0.17	(0.17)
Intermediate or Higher	-0.35*	(0.16)	0.14	(0.18)	-0.22	(0.20)
Husband's Employment (Ref=Employed)						
Unemployed	0.012	(0.41)	-0.040	(0.45)	-0.031	(0.50)
Out of Labor Force	-0.079	(0.22)	-0.61*	(0.24)	-0.69**	(0.26)
Husband's Migration (Ref=No)						
No Response	0.12	(0.13)	0.099	(0.14)	0.22	(0.15)
Yes	0.29	(0.16)	0.47**	(0.18)	0.76***	(0.19)
BIC	21880.4		22837.8		23673.1	
Variance at Level 1 (Individual Level)	2.49		2.72		3.03	
Variance at Level 2 (PSU Level)	0.535		0.584		0.68	
ICC	0.034		0.044		0.048	

Notes: *p<0.05, ** p<0.01, *** p<0.001. Standard errors in parentheses

Table 5A.8 Multilevel OLS Models Predicting Women's Household Decision Making in 2012, Ever Married Women Ages 15 to 49 at Wave III (N=6,594), 2006 Egyptian Labor Market Panel Survey

Key Variables	Individual Decision-Making 2012 N=6,594		Joint Decision-Making 2012 N=6,594		Combined Decision-Making 2012 N=6,594	
	OLS					
	b	(SE)	b	(SE)	b	(SE)
Respondent Household Decision Making 2006	0.19***	(0.018)	0.014	(0.019)	0.17***	(0.021)
Joint Household Decision Making 2006	0.12***	(0.013)	0.044**	(0.014)	0.10***	(0.017)
Mobility 2006	0.49***	(0.053)	0.11*	(0.056)	0.46***	(0.064)
Financial Autonomy 2006	0.14	(0.089)	-0.14	(0.093)	-0.080	(0.10)
Attitudes toward Gender Norms 2006	-0.17**	(0.062)	-0.00030	(0.065)	-0.060	(0.073)
Age (yrs)	-0.095***	(0.0071)	-0.084***	(0.0075)	-0.21***	(0.0089)
Education (Ref=Primary)						
None	-0.14	(0.13)	-0.27*	(0.14)	-0.44**	(0.15)
Preparatory	-0.39*	(0.16)	-0.36*	(0.17)	-0.53**	(0.19)
Secondary	-0.24	(0.21)	0.33	(0.23)	0.55*	(0.26)
Technical Secondary	0.22	(0.13)	0.047	(0.14)	0.24	(0.16)
Intermediate or Higher	0.14	(0.16)	0.75***	(0.17)	0.85***	(0.19)
Mother's Education (Ref=Primary)						
None	-0.64*	(0.31)	0.52	(0.33)	-0.052	(0.37)
Preparatory or Higher	-0.038	(0.090)	-0.11	(0.095)	-0.11	(0.11)
Married btw 2006 and 2012 Separated (Ref=Married) 2012	-0.80***	(0.11)	-0.72***	(0.12)	-1.52***	(0.14)
Older than 18 at First Marriage 2012	1.59***	(0.12)	-2.27***	(0.13)	-0.63***	(0.14)
Dowry (Ref=None) 2012	-0.13	(0.087)	-0.066	(0.092)	-0.051	(0.10)
No Response	-0.27*	(0.13)	0.23	(0.13)	-0.070	(0.15)
Some	-0.13	(0.100)	0.24*	(0.11)	0.090	(0.12)
Marriage Process Duration (Months) 2012	0.0017	(0.0033)	0.0027	(0.0034)	0.0047	(0.0038)
Related to Husband (Ref=No) 2012						
No Response	0.37*	(0.17)	0.045	(0.18)	0.70***	(0.20)
Yes	-0.063	(0.092)	-0.078	(0.096)	-0.22*	(0.11)
Ever Worked Employment (Ref=Employed)	0.39**	(0.15)	0.17	(0.15)	0.51**	(0.17)
Unemployed	0.26	(0.20)	0.31	(0.21)	0.61**	(0.23)
Retired	0.35*	(0.16)	0.12	(0.16)	0.28	(0.19)
Birth Setting: Urban Region (Ref=Greater Cairo)	-0.079	(0.11)	0.21	(0.12)	0.14	(0.13)
Alexandria & Suez Canal	-0.17	(0.19)	0.19	(0.20)	-0.015	(0.23)
Urban Lower	-0.54**	(0.18)	0.38*	(0.19)	-0.20	(0.21)
Urban Upper	-0.77***	(0.17)	0.28	(0.19)	-0.61**	(0.21)
Rural Lower	-0.64***	(0.18)	0.70***	(0.19)	-0.026	(0.21)
Rural Upper	-0.78***	(0.19)	-0.14	(0.21)	-1.12***	(0.23)
Household Wealth Index (Ref=Poorest)						
Poorer	-0.11	(0.10)	0.018	(0.11)	-0.15	(0.12)
Middle	-0.092	(0.11)	0.062	(0.11)	-0.13	(0.13)
Richer	-0.016	(0.12)	0.13	(0.13)	0.017	(0.14)
Richest	-0.17	(0.13)	-0.039	(0.14)	-0.25	(0.16)
Household Size	0.00067	(0.013)	-0.0094	(0.014)	0.019	(0.016)
BIC	31396.8		32044.6		33549.6	
Variance at Level 1 (Individual Level)	2.54		2.67		2.99	
Variance at Level 2 (PSU Level)	0.502		0.579		0.644	
ICC	0.037		0.045		0.044	

Notes: *p<0.05, ** p<0.01, *** p<0.001. Standard errors in parentheses

Chapter 6 Appendix Tables

Table 6A.1 Incident Rate Ratios and Standard Errors from Poisson Regression Models Predicting Women's Fertility (Number of Births) in 2012, Married Women Ages 15 to 49 at Wave II, 2006 and 2012 Egyptian Labor Market Panel Survey

Key Variables	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6	
	IRR	(SE)	IRR	(SE)	IRR	(SE)	IRR	(SE)	IRR	(SE)	IRR	(SE)
Individual Household Decision-Making	1.01	(0.0042)	-	-	-	-	-	-	-	-	-	-
Joint Household Decision-Making	-	-	1.00	(0.0034)	-	-	-	-	-	-	-	-
Mobility	-	-	-	-	1.03*	(0.014)	-	-	-	-	-	-
Financial Autonomy	-	-	-	-	-	-	1.00	(0.024)	-	-	-	-
Gender Attitudes	-	-	-	-	-	-	-	-	0.96**	(0.016)	-	-
Domestic Violence Attitudes	-	-	-	-	-	-	-	-	-	-	1.01	(0.0045)
Age (yrs)	1.02***	(0.0024)	1.02***	(0.0024)	1.02***	(0.0024)	1.02***	(0.0024)	1.02***	(0.0024)	1.02***	(0.0024)
Education (Ref=Primary)												
None	1.01	(0.036)	1.01	(0.036)	1.01	(0.036)	1.01	(0.036)	1.01	(0.036)	1.01	(0.036)
Preparatory	1.01	(0.049)	1.01	(0.049)	1.01	(0.049)	1.01	(0.049)	1.01	(0.049)	1.01	(0.049)
Secondary	0.97	(0.036)	0.97	(0.037)	0.97	(0.036)	0.97	(0.037)	0.98	(0.037)	0.97	(0.037)
Intermediate or Higher	0.94	(0.045)	0.94	(0.045)	0.94	(0.045)	0.95	(0.046)	0.96	(0.046)	0.95	(0.046)
Mother's Education (Ref=Primary)												
None	0.92	(0.11)	0.92	(0.11)	0.93	(0.11)	0.92	(0.11)	0.93	(0.11)	0.93	(0.11)
Preparatory or Higher	0.97	(0.026)	0.97	(0.026)	0.97	(0.026)	0.97	(0.026)	0.97	(0.026)	0.97	(0.026)
Older than 18 at First Marriage	0.86***	(0.020)	0.86***	(0.020)	0.86***	(0.020)	0.86***	(0.020)	0.86***	(0.020)	0.86***	(0.020)
Dowry (Ref=None)												
No Response	1.03	(0.025)	1.04	(0.025)	1.03	(0.025)	1.04	(0.025)	1.04	(0.025)	1.04	(0.025)
Some	1.04*	(0.023)	1.05*	(0.023)	1.04*	(0.023)	1.05*	(0.023)	1.04	(0.023)	1.05*	(0.023)
Marriage Process Duration (Months)	1.00	(0.0007)	1.00	(0.0007)	1.00	(0.0007)	1.00	(0.0007)	1.00	(0.0007)	1.00	(0.0007)
Related to Husband	1.02	(0.020)	1.02	(0.020)	1.02	(0.020)	1.02	(0.020)	1.02	(0.020)	1.02	(0.020)
Ever Worked	1.01	(0.038)	1.01	(0.038)	1.01	(0.038)	1.01	(0.038)	1.01	(0.038)	1.01	(0.038)
Employment (Ref=Employed)												
Unemployed	1.04	(0.059)	1.04	(0.059)	1.04	(0.059)	1.04	(0.059)	1.04	(0.059)	1.04	(0.059)
Retired	1.05	(0.043)	1.05	(0.043)	1.05	(0.043)	1.05	(0.043)	1.05	(0.043)	1.05	(0.043)
Birth Setting: Urban	1.00	(0.029)	1.00	(0.029)	1.00	(0.029)	1.00	(0.029)	1.00	(0.029)	1.00	(0.029)
Region (Ref=Greater Cairo)												
Alexandria & Suez Canal	0.98	(0.047)	0.97	(0.047)	0.98	(0.047)	0.97	(0.047)	0.97	(0.047)	0.98	(0.047)
Urban Lower	0.99	(0.044)	1.00	(0.044)	1.00	(0.044)	0.99	(0.044)	0.99	(0.044)	0.99	(0.044)
Urban Upper	1.16***	(0.047)	1.15***	(0.047)	1.17***	(0.048)	1.15***	(0.047)	1.15***	(0.047)	1.15***	(0.047)
Rural Lower	1.03	(0.045)	1.03	(0.045)	1.03	(0.045)	1.03	(0.045)	1.02	(0.045)	1.03	(0.045)
Rural Upper	1.14**	(0.052)	1.14**	(0.052)	1.15**	(0.053)	1.13**	(0.051)	1.13**	(0.051)	1.13**	(0.051)
Household Wealth Index (Ref=Poorest)												
Poorer	0.96	(0.026)	0.96	(0.026)	0.96	(0.027)	0.96	(0.026)	0.96	(0.026)	0.96	(0.027)
Middle	0.94*	(0.028)	0.94*	(0.028)	0.94*	(0.028)	0.94*	(0.028)	0.94*	(0.028)	0.94*	(0.028)
Richer	0.94	(0.032)	0.94	(0.032)	0.95	(0.032)	0.94	(0.032)	0.94	(0.032)	0.94	(0.032)
Richest	0.91*	(0.035)	0.90**	(0.035)	0.91*	(0.035)	0.91*	(0.035)	0.91**	(0.035)	0.91*	(0.035)
Household Size	1.03***	(0.0035)	1.03***	(0.0035)	1.03***	(0.0035)	1.03***	(0.0035)	1.03***	(0.0034)	1.03***	(0.0034)
Husband's Age (yrs)	1.00	(0.0019)	1.00	(0.0019)	1.00	(0.0019)	1.00	(0.0019)	1.00	(0.0019)	1.00	(0.0019)
Husband's Education (Ref=Primary)												
None	1.00	(0.030)	1.00	(0.030)	1.00	(0.030)	1.00	(0.030)	1.00	(0.030)	1.00	(0.030)
Preparatory	1.01	(0.048)	1.01	(0.048)	1.01	(0.048)	1.01	(0.048)	1.01	(0.048)	1.01	(0.048)
Secondary	1.00	(0.032)	1.00	(0.032)	1.00	(0.032)	1.00	(0.032)	1.00	(0.032)	1.00	(0.032)
Intermediate or Higher	1.02	(0.040)	1.02	(0.040)	1.03	(0.040)	1.02	(0.040)	1.03	(0.040)	1.02	(0.040)
Husband's Employment (Ref=Employed)												

Unemployed	0.98	(0.098)	0.98	(0.098)	0.97	(0.097)	0.98	(0.098)	0.98	(0.098)	0.99	(0.099)
Out of Labor Force	0.92	(0.056)	0.93	(0.056)	0.92	(0.056)	0.93	(0.056)	0.93	(0.056)	0.93	(0.056)
Husband's Migration (Ref=No)												
No Response	0.97	(0.031)	0.97	(0.031)	0.97	(0.031)	0.97	(0.031)	0.97	(0.031)	0.97	(0.031)
Yes	1.01	(0.037)	1.02	(0.037)	1.01	(0.037)	1.01	(0.037)	1.01	(0.037)	1.01	(0.037)
Observations	3749		3749		3749		3749		3749		3749	
Pseudo R-squared	0.0567		0.0566		0.057		0.0565		0.057		0.0566	
BIC	12998.9		13000.0		12995.6		13001.5		12994.6		13000.2	

Notes: *p<0.05, ** p<0.01, *** p<0.001. Standard errors in parentheses

Table 6A.2 Incident Rate Ratios and Standard Errors from Poisson Regression Models Predicting Women's Fertility (Number of Births) in 2012, Married Women Ages 15 to 49 at Wave II, 2006 and 2012 Egyptian Labor Market Panel Survey

Key Variables	Model 7		Model 8	
	IRR	(SE)	IRR	(SE)
Individual Household Decision-Making	1.01*	(0.0047)	1.01	(0.0051)
Joint Household Decision-Making	1.01*	(0.0038)	1.01*	(0.0038)
Mobility	-	-	1.03*	(0.016)
Financial Autonomy	-	-	1.00	(0.024)
Gender Attitudes	-	-	0.95**	(0.016)
Domestic Violence Attitudes	-	-	1.01	(0.0046)
Age (yrs)	1.02***	(0.0024)	1.02***	(0.0024)
Education (Ref=Primary)				
None	1.01	(0.036)	1.02	(0.036)
Preparatory	1.01	(0.049)	1.01	(0.049)
Secondary	0.97	(0.036)	0.98	(0.037)
Intermediate or Higher	0.94	(0.045)	0.96	(0.046)
Mother's Education (Ref=Primary)				
None	0.92	(0.11)	0.94	(0.11)
Preparatory or Higher	0.97	(0.026)	0.97	(0.026)
Older than 18 at First Marriage	0.86***	(0.020)	0.86***	(0.020)
Dowry (Ref=None)				
No Response	1.03	(0.025)	1.04	(0.025)
Some	1.04*	(0.023)	1.04	(0.023)
Marriage Process Duration (Months)	1.00	(0.00070)	1.00	(0.00071)
Related to Husband	1.02	(0.020)	1.02	(0.020)
Ever Worked	1.01	(0.038)	1.00	(0.038)
Employment (Ref=Employed)				
Unemployed	1.04	(0.059)	1.04	(0.059)
Retired	1.05	(0.043)	1.05	(0.043)
Birth Setting: Urban	1.00	(0.029)	1.00	(0.029)
Region (Ref=Greater Cairo)				
Alexandria & Suez Canal	0.98	(0.047)	0.99	(0.048)
Urban Lower	1.00	(0.044)	1.00	(0.044)
Urban Upper	1.17***	(0.048)	1.19***	(0.049)
Rural Lower	1.03	(0.045)	1.03	(0.045)
Rural Upper	1.16**	(0.053)	1.17***	(0.054)
Household Wealth Index (Ref=Poorest)				
Poorer	0.96	(0.026)	0.97	(0.027)
Middle	0.94*	(0.028)	0.95	(0.028)
Richer	0.94	(0.032)	0.95	(0.032)
Richest	0.91*	(0.035)	0.91*	(0.035)
Household Size	1.03***	(0.0035)	1.03***	(0.0035)
Husband's Age (yrs)	1.00	(0.0019)	1.00	(0.0019)
Husband's Education (Ref=Primary)				
None	1.00	(0.030)	1.00	(0.030)
Preparatory	1.01	(0.048)	1.01	(0.048)
Secondary	1.00	(0.032)	1.00	(0.032)
Intermediate or Higher	1.02	(0.040)	1.03	(0.040)
Husband's Employment (Ref=Employed)				
Unemployed	0.98	(0.098)	0.97	(0.097)
Out of Labor Force	0.92	(0.056)	0.93	(0.056)
Husband's Migration (Ref=No)				
No Response	0.97	(0.031)	0.97	(0.031)
Yes	1.01	(0.037)	1.01	(0.036)
Observations	3749		3749	
Pseudo R-squared	0.0571		0.0581	
BIC	13002.6		13021.4	

Notes: *p<0.05, ** p<0.01, *** p<0.001. Standard errors in parentheses

Table 6.A3 Incident Rate Ratios and Standard Errors from Poisson Regression Models Predicting Women's Fertility (Number of Birth) in 2012, Women Ages 15 to 49 at Wave II and Ever Married by Wave III, 2006 and 2012 Egyptian Labor Market Panel Survey

Key Variables	Model 1		Model 2		Model 3		Model 4		Model 5	
	IRR	(SE)	IRR	(SE)	IRR	(SE)	IRR	(SE)	IRR	(SE)
Individual Household Decision-Making	0.0059	(0.0038)	-	-	-	-	-	-	-	-
Joint Household Decision-Making	-	-	0.0056	(0.0032)	-	-	-	-	-	-
Mobility	-	-	-	-	0.036**	(0.012)	-	-	-	-
Financial Autonomy	-	-	-	-	-	-	-0.0038	(0.022)	-	-
Gender Attitudes	-	-	-	-	-	-	-	-	-0.030*	(0.015)
Age (yrs)	0.024***	(0.0021)	0.025***	(0.0021)	0.024***	(0.0021)	0.025***	(0.0021)	0.025***	(0.0021)
Education (Ref=Primary)										
None	0.015	(0.032)	0.016	(0.032)	0.013	(0.032)	0.014	(0.032)	0.014	(0.032)
Preparatory	-0.023	(0.042)	-0.023	(0.041)	-0.024	(0.041)	-0.022	(0.042)	-0.019	(0.042)
Secondary	-0.036	(0.033)	-0.037	(0.033)	-0.037	(0.033)	-0.036	(0.033)	-0.030	(0.033)
Intermediate or Higher	-0.061	(0.040)	-0.064	(0.040)	-0.062	(0.040)	-0.061	(0.040)	-0.053	(0.040)
Mother's Education (Ref=Primary)										
None	-0.049	(0.097)	-0.048	(0.097)	-0.045	(0.097)	-0.049	(0.097)	-0.046	(0.097)
Preparatory or Higher	-0.028	(0.023)	-0.031	(0.023)	-0.025	(0.023)	-0.029	(0.023)	-0.029	(0.023)
Married in 2012	0.25***	(0.038)	0.25***	(0.038)	0.25***	(0.038)	0.25***	(0.038)	0.25***	(0.038)
Older than 18 at First Marriage (2012)	-0.16***	(0.020)	-0.16***	(0.020)	-0.16***	(0.020)	-0.16***	(0.020)	-0.16***	(0.020)
Dowry (Ref=None) (2012)										
No Response	-0.054	(0.031)	-0.055	(0.031)	-0.055	(0.031)	-0.054	(0.031)	-0.051	(0.031)
Some	-0.024	(0.024)	-0.023	(0.024)	-0.023	(0.024)	-0.023	(0.024)	-0.023	(0.024)
Marriage Process Duration (Months) (2012)	0.0014	(0.0008)	0.0014	(0.0008)	0.0013	(0.0008)	0.0014	(0.0008)	0.0013	(0.0008)
Married btw 2006 and 2012	-0.48***	(0.031)	-0.47***	(0.032)	-0.46***	(0.031)	-0.48***	(0.031)	-0.48***	(0.031)
Related to Husband (Ref=No) (2012)										
No Response	0.030	(0.041)	0.030	(0.041)	0.031	(0.041)	0.030	(0.041)	0.027	(0.041)
Yes	0.0037	(0.022)	0.0039	(0.022)	0.0036	(0.022)	0.0039	(0.022)	0.0040	(0.022)
Ever Worked	0.0039	(0.035)	0.0048	(0.035)	-0.00036	(0.035)	0.0058	(0.035)	0.0055	(0.035)
Employment (Ref=Employed)										
Unemployed	0.0065	(0.049)	0.0059	(0.049)	0.0059	(0.049)	0.0067	(0.049)	0.0087	(0.049)
Retired	0.021	(0.038)	0.021	(0.038)	0.019	(0.038)	0.020	(0.038)	0.019	(0.038)
Birth Setting: Urban	0.012	(0.027)	0.013	(0.027)	0.012	(0.027)	0.012	(0.027)	0.012	(0.027)
Region (Ref=Greater Cairo)										
Alexandria & Suez Canal	-0.025	(0.042)	-0.030	(0.042)	-0.020	(0.042)	-0.028	(0.042)	-0.030	(0.042)
Urban Lower	0.0077	(0.038)	0.013	(0.038)	0.011	(0.038)	0.0093	(0.038)	0.0076	(0.038)
Urban Upper	0.16***	(0.036)	0.15***	(0.035)	0.16***	(0.036)	0.15***	(0.036)	0.15***	(0.036)
Rural Lower	0.044	(0.038)	0.049	(0.038)	0.049	(0.038)	0.046	(0.038)	0.042	(0.038)
Rural Upper	0.15***	(0.041)	0.15***	(0.040)	0.16***	(0.041)	0.14***	(0.040)	0.14***	(0.040)
Household Wealth Index (Ref=Poorest)										
Poorer	-0.026	(0.025)	-0.027	(0.025)	-0.024	(0.025)	-0.027	(0.025)	-0.027	(0.025)
Middle	-0.059*	(0.026)	-0.060*	(0.026)	-0.056*	(0.026)	-0.060*	(0.027)	-0.059*	(0.026)
Richer	-0.052	(0.029)	-0.055	(0.029)	-0.049	(0.029)	-0.053	(0.029)	-0.053	(0.029)
Richest	-0.096**	(0.033)	-0.10**	(0.033)	-0.092**	(0.033)	-0.098**	(0.033)	-0.098**	(0.033)
Household Size	0.030***	(0.0030)	0.030***	(0.0030)	0.030***	(0.0030)	0.030***	(0.0030)	0.030***	(0.0030)
Female Head of Household	0.073	(0.042)	0.11**	(0.040)	0.072	(0.040)	0.100*	(0.039)	0.10**	(0.039)
Observations	5211		5211		5211		5211		5211	
Pseudo R-squared	0.1016		0.1017		0.102		0.1015		0.1017	
BIC	17118.3		17117.6		17112.1		17120.7		17116.8	

Notes: *p<0.05, ** p<0.01, *** p<0.001. Standard errors in parentheses

Table 6.A4 Incident Rate Ratios and Standard Errors from Poisson Regression Models Predicting Women's Fertility (Number of Birth) in 2012, Women Ages 15 to 49 at Wave II and Ever Married by Wave III, 2006 and 2012 Egyptian Labor Market Panel Survey

Key Variables	Model 6		Model 7	
	IRR	(SE)	IRR	(SE)
Individual Household Decision-Making	0.010*	(0.0042)	0.0063	(0.0046)
Joint Household Decision-Making	0.0089**	(0.0034)	0.0092**	(0.0034)
Mobility	-	-	0.034*	(0.014)
Financial Autonomy	-	-	-0.0054	(0.022)
Gender Attitudes	-	-	-0.035*	(0.015)
Age (yrs)	0.024***	(0.0021)	0.024***	(0.0021)
Education (Ref=Primary)				
None	0.017	(0.032)	0.016	(0.032)
Preparatory	-0.025	(0.042)	-0.022	(0.042)
Secondary	-0.037	(0.033)	-0.031	(0.033)
Intermediate or Higher	-0.063	(0.040)	-0.053	(0.041)
Mother's Education (Ref=Primary)				
None	-0.048	(0.097)	-0.040	(0.097)
Preparatory or Higher	-0.030	(0.023)	-0.027	(0.023)
Married in 2012	0.25***	(0.038)	0.24***	(0.038)
Older than 18 at First Marriage (2012)	-0.16***	(0.020)	-0.16***	(0.020)
Dowry (Ref=None) (2012)				
No Response	-0.055	(0.031)	-0.051	(0.031)
Some	-0.024	(0.024)	-0.023	(0.024)
Marriage Process Duration (Months) (2012)	0.0014	(0.00081)	0.0014	(0.00081)
Married btw 2006 and 2012	-0.45***	(0.032)	-0.43***	(0.033)
Related to Husband (Ref=No) (2012)				
No Response	0.030	(0.041)	0.027	(0.041)
Yes	0.0039	(0.022)	0.0042	(0.022)
Ever Worked	0.0013	(0.035)	-0.0035	(0.035)
Employment (Ref=Employed)				
Unemployed	0.0039	(0.049)	0.0040	(0.050)
Retired	0.021	(0.038)	0.018	(0.038)
Birth Setting: Urban	0.012	(0.027)	0.011	(0.027)
Region (Ref=Greater Cairo)				
Alexandria & Suez Canal	-0.024	(0.042)	-0.021	(0.042)
Urban Lower	0.014	(0.038)	0.016	(0.038)
Urban Upper	0.16***	(0.036)	0.17***	(0.036)
Rural Lower	0.050	(0.038)	0.052	(0.038)
Rural Upper	0.16***	(0.041)	0.17***	(0.041)
Household Wealth Index (Ref=Poorest)				
Poorer	-0.026	(0.025)	-0.024	(0.025)
Middle	-0.058*	(0.026)	-0.053*	(0.027)
Richer	-0.052	(0.029)	-0.047	(0.030)
Richest	-0.098**	(0.033)	-0.093**	(0.034)
Household Size	0.031***	(0.0031)	0.031***	(0.0031)
Female Head of Household	0.079	(0.042)	0.072	(0.043)
Observations	5211		5211	
Pseudo R-squared	0.102		0.1026	
BIC	17120.2		17134.2	

Notes: *p<0.05, ** p<0.01, *** p<0.001. Standard errors in parentheses

Table 6A.5 Betas and Standard Errors from Multi Level OLS Regression Models Predicting Women's Fertility (Number of Births) of Married Women Ages 15 to 49 at Wave II, 2006 and 2012 Egyptian Labor Market Panel Survey N=3,749

Key Variables	Model 1		Model 2		Model 3	
	b	(SE)	b	(SE)	b	(SE)
Individual Household Decision-Making	0.024*	(0.0094)	-	-	-	-
Joint Household Decision-Making	-	-	0.011	(0.0075)	-	-
Combined Household Decision-Making	-	-	-	-	0.027***	(0.0075)
Age (yrs)	0.075***	(0.0051)	0.076***	(0.0051)	0.074***	(0.0051)
Education (Ref=Primary)						
None	0.077	(0.078)	0.077	(0.078)	0.083	(0.078)
Preparatory	0.034	(0.11)	0.038	(0.11)	0.034	(0.10)
Secondary	-0.060	(0.079)	-0.059	(0.079)	-0.061	(0.079)
Intermediate or Higher	-0.12	(0.099)	-0.12	(0.100)	-0.12	(0.099)
Mother's Education (Ref=Primary)						
None	-0.13	(0.23)	-0.13	(0.23)	-0.14	(0.22)
Preparatory or Higher	-0.082	(0.054)	-0.091	(0.054)	-0.092	(0.054)
Older than 18 at First Marriage	-0.58***	(0.051)	-0.58***	(0.051)	-0.58***	(0.051)
Dowry (Ref=None)						
No Response	0.10	(0.056)	0.11*	(0.056)	0.10	(0.056)
Some	0.15**	(0.049)	0.16**	(0.049)	0.15**	(0.049)
Marriage Process Duration (Months)	-0.00058	(0.0015)	-0.00066	(0.0015)	-0.00076	(0.0015)
Related to Husband	0.054	(0.043)	0.052	(0.043)	0.052	(0.043)
Ever Worked	0.0095	(0.080)	0.010	(0.080)	0.00075	(0.080)
Employment (Ref=Employed)						
Unemployed	0.17	(0.12)	0.17	(0.12)	0.16	(0.12)
Retired	0.17	(0.088)	0.16	(0.088)	0.17	(0.088)
Birth Setting: Urban	-0.016	(0.062)	-0.014	(0.062)	-0.017	(0.062)
Region (Ref=Greater Cairo)						
Alexandria & Suez Canal	-0.028	(0.11)	-0.048	(0.11)	(0.11)	-0.030
Urban Lower	-0.011	(0.10)	0.0038	(0.10)	0.018	(0.10)
Urban Upper	0.48***	(0.096)	0.46***	(0.095)	0.50***	(0.096)
Rural Lower	0.068	(0.099)	0.082	(0.099)	0.092	(0.099)
Rural Upper	0.46***	(0.11)	0.44***	(0.11)	0.48***	(0.11)
Household Wealth Index (Ref=Poorest)						
Poorer	-0.15*	(0.062)	-0.15*	(0.062)	-0.15*	(0.062)
Middle	-0.24***	(0.066)	-0.24***	(0.066)	-0.24***	(0.066)
Richer	-0.21**	(0.073)	-0.22**	(0.073)	-0.22**	(0.073)
Richest	-0.33***	(0.084)	-0.35***	(0.084)	-0.35***	(0.084)
Household Size	0.12***	(0.0078)	0.12***	(0.0078)	0.12***	(0.0078)
Husband's Age (yrs)	-0.0020	(0.0041)	-0.0018	(0.0041)	-0.0015	(0.0041)
Husband's Education (Ref=Primary)						
None	0.0075	(0.067)	0.0075	(0.067)	0.0074	(0.067)
Preparatory	0.053	(0.10)	0.056	(0.10)	0.053	(0.10)
Secondary	-0.011	(0.068)	-0.012	(0.068)	-0.011	(0.068)
Intermediate or Higher	0.076	(0.082)	0.066	(0.082)	0.068	(0.082)
Husband's Employment (Ref=Employed)						
Unemployed	-0.12	(0.21)	-0.12	(0.21)	-0.13	(0.21)
Out of Labor Force	-0.32*	(0.13)	-0.31*	(0.13)	-0.31*	(0.13)
Husband's Migration (Ref=No)						
No Response	-0.13*	(0.066)	-0.13	(0.066)	-0.13*	(0.066)
Yes	0.021	(0.082)	0.026	(0.082)	0.021	(0.082)
Observations	3749		3749		3749	
BIC	12080.0		12084.2		12073.6	
Variance at Level 1 (Individual Level)	1.15		1.15		1.14	
Variance at Level 2 (PSU Level)	0.261		0.259		0.255	
ICC	0.048		0.048		0.048	

Notes: *p<0.05, ** p<0.01, *** p<0.001. Standard errors in parentheses

Table 6A.6 Betas and Standard Errors from Multi Level OLS Regression Models Predicting Women's Fertility (Number of Births) in 2012, Married Women Ages 15 to 49 at Wave II, 2006 and 2012 Egyptian Labor Market Panel Survey N=3,749

Key Variables	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6	
	b	(SE)	b	(SE)	b	(SE)	b	(SE)	b	(SE)	b	(SE)
Individual Household Decision-Making	0.019*	(0.0094)	-	-	-	-	-	-	-	-	-	-
Joint Household Decision-Making	-	-	0.0046	(0.0075)	-	-	-	-	-	-	-	-
Mobility	-	-	-	-	0.067*	(0.031)	-	-	-	-	-	-
Financial Autonomy	-	-	-	-	-	-	-0.020	(0.051)	-	-	-	-
Gender Attitudes	-	-	-	-	-	-	-	-	-0.14***	(0.036)	-	-
Domestic Violence Attitudes	-	-	-	-	-	-	-	-	-	-	0.016	(0.0099)
Ever had a Birth 2006 (0/1)	0.43***	(0.072)	0.44***	(0.073)	0.41***	(0.074)	0.45***	(0.072)	0.44***	(0.072)	0.45***	(0.072)
Age (yrs)	0.070***	(0.0051)	0.071***	(0.0051)	0.070***	(0.0051)	0.071***	(0.0051)	0.072***	(0.0051)	0.071***	(0.0051)
Education (Ref=Primary)												
None	0.083	(0.077)	0.083	(0.077)	0.084	(0.077)	0.082	(0.077)	0.082	(0.077)	0.082	(0.077)
Preparatory	0.035	(0.10)	0.038	(0.10)	0.033	(0.10)	0.039	(0.10)	0.048	(0.10)	0.037	(0.10)
Secondary	-0.062	(0.079)	-0.061	(0.079)	-0.066	(0.079)	-0.061	(0.079)	-0.038	(0.079)	-0.057	(0.079)
Intermediate or Higher	-0.092	(0.099)	-0.094	(0.099)	-0.097	(0.099)	-0.090	(0.099)	-0.056	(0.099)	-0.083	(0.099)
Mother's Education (Ref=Primary)												
None	-0.11	(0.22)	-0.11	(0.22)	-0.099	(0.22)	-0.11	(0.22)	-0.090	(0.22)	-0.10	(0.22)
Preparatory or Higher	-0.074	(0.054)	-0.080	(0.054)	-0.069	(0.054)	-0.078	(0.054)	-0.079	(0.054)	-0.077	(0.054)
Older than 18 at First Marriage	-0.56***	(0.051)	-0.57***	(0.051)	-0.56***	(0.051)	-0.56***	(0.051)	-0.57***	(0.051)	-0.57***	(0.051)
Dowry (Ref=None)												
No Response	0.095	(0.056)	0.10	(0.055)	0.097	(0.055)	0.10	(0.055)	0.11	(0.055)	0.100	(0.055)
Some	0.15**	(0.049)	0.15**	(0.049)	0.15**	(0.049)	0.15**	(0.049)	0.14**	(0.048)	0.15**	(0.049)
Marriage Process Duration (Months)	-0.00087	(0.0015)	-0.00091	(0.0015)	-0.00085	(0.0015)	-0.00089	(0.0015)	-0.00093	(0.0015)	-0.00092	(0.0015)
Related to Husband	0.050	(0.042)	0.048	(0.043)	0.052	(0.043)	0.049	(0.043)	0.044	(0.042)	0.049	(0.043)
Ever Worked	0.015	(0.079)	0.017	(0.079)	0.013	(0.079)	0.020	(0.079)	0.023	(0.079)	0.019	(0.079)
Employment (Ref=Employed)												
Unemployed	0.15	(0.12)	0.15	(0.12)	0.16	(0.12)	0.15	(0.12)	0.17	(0.12)	0.15	(0.12)
Retired	0.16	(0.087)	0.16	(0.087)	0.17	(0.087)	0.16	(0.087)	0.16	(0.087)	0.16	(0.087)
Birth Setting: Urban	-0.022	(0.061)	-0.020	(0.061)	-0.021	(0.061)	-0.020	(0.061)	-0.023	(0.061)	-0.020	(0.061)
Region (Ref=Greater Cairo)												
Alexandria & Suez Canal	-0.010	(0.11)	-0.025	(0.11)	-0.0083	(0.11)	-0.023	(0.11)	-0.028	(0.11)	-0.012	(0.11)
Urban Lower	-0.0072	(0.100)	-0.00029	(0.100)	-0.00012	(0.100)	-0.0032	(0.100)	-0.011	(0.099)	-0.0052	(0.100)
Urban Upper	0.50***	(0.095)	0.48***	(0.095)	0.51***	(0.095)	0.48***	(0.095)	0.50***	(0.094)	0.48***	(0.094)
Rural Lower	0.082	(0.099)	0.089	(0.099)	0.090	(0.098)	0.087	(0.099)	0.077	(0.098)	0.081	(0.098)
Rural Upper	0.49***	(0.11)	0.47***	(0.10)	0.49***	(0.11)	0.47***	(0.10)	0.47***	(0.10)	0.46***	(0.10)
Household Wealth Index (Ref=Poorest)												
Poorer	-0.14*	(0.061)	-0.15*	(0.062)	-0.14*	(0.062)	-0.14*	(0.062)	-0.14*	(0.061)	-0.14*	(0.062)
Middle	-0.22***	(0.066)	-0.22***	(0.066)	-0.22***	(0.066)	-0.22***	(0.066)	-0.21**	(0.066)	-0.22***	(0.066)
Richer	-0.19**	(0.073)	-0.20**	(0.073)	-0.19**	(0.073)	-0.20**	(0.073)	-0.19**	(0.073)	-0.19**	(0.073)
Richest	-0.32***	(0.084)	-0.33***	(0.084)	-0.32***	(0.084)	-0.32***	(0.084)	-0.33***	(0.083)	-0.32***	(0.084)
Household Size	0.11***	(0.0079)	0.11***	(0.0078)	0.11***	(0.0079)	0.11***	(0.0079)	0.11***	(0.0078)	0.11***	(0.0078)
Husband's Age (yrs)	-0.0023	(0.0041)	-0.0022	(0.0041)	-0.0021	(0.0041)	-0.0023	(0.0041)	-0.0028	(0.0041)	-0.0024	(0.0041)
Husband's Education (Ref=Primary)												
None	0.017	(0.066)	0.017	(0.066)	0.015	(0.066)	0.017	(0.066)	0.023	(0.066)	0.012	(0.066)
Preparatory	0.070	(0.10)	0.072	(0.10)	0.074	(0.10)	0.072	(0.10)	0.086	(0.10)	0.077	(0.10)
Secondary	-0.0022	(0.068)	-0.0027	(0.068)	0.0015	(0.068)	-0.0028	(0.068)	0.0067	(0.068)	-0.0012	(0.068)
Intermediate or Higher	0.075	(0.082)	0.069	(0.082)	0.076	(0.082)	0.070	(0.082)	0.081	(0.082)	0.073	(0.082)
Husband's Employment (Ref=Employed)												

Unemployed	-0.15	(0.21)	-0.15	(0.21)	-0.16	(0.21)	-0.15	(0.21)	-0.14	(0.21)	-0.14	(0.21)
Out of Labor Force	-0.27*	(0.13)	-0.26*	(0.13)	-0.28*	(0.13)	-0.26*	(0.13)	-0.25	(0.13)	-0.26*	(0.13)
Husband's Migration (Ref=No)												
No Response	-0.14*	(0.066)	-0.13*	(0.066)	-0.14*	(0.066)	-0.13*	(0.066)	-0.14*	(0.066)	-0.13*	(0.066)
Yes	0.019	(0.081)	0.023	(0.081)	0.021	(0.081)	0.023	(0.081)	0.018	(0.081)	0.022	(0.081)
Observations	3749		3749		3749		3749		3749		3749	
BIC	12052.1		12055.6		12051.4		12055.8		12041.0		12053.2	
Variance at Level 1 (Individual Level)	1.13		1.13		1.13		1.13		1.13		1.13	
Variance at Level 2 (PSU Level)	0.25		0.25		0.25		0.25		0.24		0.25	
ICC	0.047		0.046		0.046		0.046		0.043		0.046	

Notes: *p<0.05, ** p<0.01, *** p<0.001. Standard errors in parentheses

Table 6A.7 Betas and Standard Errors from Multi Level OLS Regression Models Predicting Women's Fertility (Number of Births) in 2012, Married Women Ages 15 to 49 at Wave II, 2006 and 2012 Egyptian Labor Market Panel Survey N=3,749

Key Variables	Model 7		Model 8	
	b	(SE)	b	(SE)
Individual Household Decision-Making	0.026*	(0.010)	0.024*	(0.011)
Joint Household Decision-Making	0.014	(0.0083)	0.017*	(0.0083)
Mobility	-	-	0.063	(0.034)
Financial Autonomy	-	-	-0.012	(0.051)
Gender Attitudes	-	-	-0.15***	(0.036)
Domestic Violence Attitudes	-	-	0.016	(0.0100)
Ever had a Birth 2006 (0/1)	0.41***	(0.074)	0.36***	(0.076)
Age (yrs)	0.069***	(0.0051)	0.070***	(0.0051)
Education (Ref=Primary)				
None	0.087	(0.077)	0.087	(0.077)
Preparatory	0.034	(0.10)	0.040	(0.10)
Secondary	-0.063	(0.079)	-0.037	(0.079)
Intermediate or Higher	-0.095	(0.099)	-0.052	(0.100)
Mother's Education (Ref=Primary)				
None	-0.12	(0.22)	-0.080	(0.22)
Preparatory or Higher	-0.079	(0.054)	-0.073	(0.054)
Older than 18 at First Marriage	-0.56***	(0.051)	-0.56***	(0.051)
Dowry (Ref=None)				
No Response	0.094	(0.056)	0.098	(0.055)
Some	0.15**	(0.049)	0.13**	(0.048)
Marriage Process Duration (Months)	-0.00094	(0.0015)	-0.0010	(0.0015)
Related to Husband	0.049	(0.042)	0.048	(0.042)
Ever Worked	0.0096	(0.079)	0.0079	(0.079)
Employment (Ref=Employed)				
Unemployed	0.15	(0.12)	0.16	(0.12)
Retired	0.16	(0.087)	0.16	(0.087)
Birth Setting: Urban	-0.023	(0.061)	-0.027	(0.061)
Region (Ref=Greater Cairo)				
Alexandria & Suez Canal	-0.0082	(0.11)	0.012	(0.11)
Urban Lower	0.0063	(0.10)	0.0089	(0.099)
Urban Upper	0.51***	(0.095)	0.55***	(0.095)
Rural Lower	0.092	(0.099)	0.089	(0.098)
Rural Upper	0.50***	(0.11)	0.52***	(0.11)
Household Wealth Index (Ref=Poorest)				
Poorer	-0.14*	(0.061)	-0.13*	(0.061)
Middle	-0.22***	(0.066)	-0.20**	(0.066)
Richer	-0.20**	(0.073)	-0.17*	(0.073)
Richest	-0.33***	(0.084)	-0.31***	(0.084)
Household Size	0.11***	(0.0079)	0.11***	(0.0079)
Husband's Age (yrs)	-0.0020	(0.0041)	-0.0023	(0.0041)
Husband's Education (Ref=Primary)				
None	0.016	(0.066)	0.016	(0.066)
Preparatory	0.069	(0.10)	0.088	(0.10)
Secondary	-0.0026	(0.068)	0.012	(0.068)
Intermediate or Higher	0.073	(0.082)	0.090	(0.082)
Husband's Employment (Ref=Employed)				
Unemployed	-0.16	(0.21)	-0.15	(0.21)
Out of Labor Force	-0.27*	(0.13)	-0.26*	(0.13)
Husband's Migration (Ref=No)	-0.14*	(0.066)	-0.14*	(0.066)
No Response	0.018	(0.081)	0.012	(0.081)
Yes	-0.033	(0.060)	-0.035	(0.060)
Observations	3749		3749	
BIC	12080.2		12081.8	
Variance at Level 1 (Individual Level)	1.13		1.13	
Variance at Level 2 (PSU Level)	0.25		0.24	
ICC	0.047		0.045	

Notes: *p<0.05, ** p<0.01, *** p<0.001. Standard errors in parentheses

Table 6A.8 Betas and Standard Errors from Multi Level OLS Regression Models Predicting Women's Fertility (Number of Births) in 2012, Married Women Ages 15 to 49 at Wave II, 2006 and 2012 Egyptian Labor Market Panel Survey N=3,749

Key Variables	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6	
	b	(SE)	b	(SE)	b	(SE)	b	(SE)	b	(SE)	b	(SE)
Individual Household Decision-Making	0.0065	(0.0071)	-	-	-	-	-	-	-	-	-	-
Joint Household Decision-Making	-	-	0.00042	(0.0057)	-	-	-	-	-	-	-	-
Mobility	-	-	-	-	0.021	(0.024)	-	-	-	-	-	-
Financial Autonomy	-	-	-	-	-	-	-0.0012	(0.040)	-	-	-	-
Gender Attitudes	-	-	-	-	-	-	-	-	-0.055*	(0.028)	-	-
Domestic Violence Attitudes	-	-	-	-	-	-	-	-	-	-	0.0054	(0.0076)
Births 2006	0.61***	(0.011)	0.61***	(0.011)	0.61***	(0.011)	0.61***	(0.011)	0.61***	(0.011)	0.61***	(0.011)
Age (yrs)												
Education (Ref=Primary)	-0.017***	(0.0044)	-0.017***	(0.0044)	-0.017***	(0.0044)	-0.017***	(0.0044)	-0.016***	(0.0044)	-0.017***	(0.0044)
None	0.029	(0.060)	0.029	(0.060)	0.029	(0.060)	0.028	(0.060)	0.029	(0.060)	0.028	(0.060)
Preparatory	0.045	(0.082)	0.047	(0.082)	0.046	(0.082)	0.047	(0.082)	0.052	(0.082)	0.047	(0.082)
Secondary	0.018	(0.062)	0.019	(0.062)	0.017	(0.062)	0.019	(0.062)	0.029	(0.062)	0.021	(0.062)
Intermediate or Higher	0.069	(0.078)	0.069	(0.078)	0.068	(0.078)	0.069	(0.078)	0.085	(0.078)	0.072	(0.078)
Mother's Education (Ref=Primary)												
None	-0.12	(0.19)	-0.12	(0.19)	-0.12	(0.19)	-0.12	(0.19)	-0.11	(0.19)	-0.12	(0.19)
Preparatory or Higher	-0.12**	(0.043)	-0.13**	(0.043)	-0.12**	(0.043)	-0.13**	(0.043)	-0.13**	(0.043)	-0.12**	(0.043)
Older than 18 at First Marriage	-0.071	(0.041)	-0.071	(0.041)	-0.070	(0.041)	-0.071	(0.041)	-0.073	(0.041)	-0.072	(0.041)
Dowry (Ref=None)												
No Response	0.032	(0.041)	0.034	(0.041)	0.033	(0.041)	0.034	(0.041)	0.038	(0.041)	0.034	(0.041)
Some	0.0028	(0.037)	0.0047	(0.037)	0.0037	(0.037)	0.0046	(0.037)	-0.00015	(0.037)	0.0042	(0.037)
Marriage Process Duration (Months)	0.00073	(0.0012)	0.00072	(0.0012)	0.00074	(0.0012)	0.00072	(0.0012)	0.00069	(0.0012)	0.00070	(0.0012)
Related to Husband	-0.047	(0.033)	-0.048	(0.033)	-0.047	(0.033)	-0.048	(0.033)	-0.050	(0.033)	-0.048	(0.033)
Ever Worked	0.0012	(0.063)	0.0028	(0.063)	0.00019	(0.063)	0.0030	(0.063)	0.0035	(0.063)	0.0032	(0.063)
Employment (Ref=Employed)												
Unemployed	0.050	(0.092)	0.050	(0.092)	0.051	(0.092)	0.050	(0.092)	0.056	(0.092)	0.049	(0.092)
Retired	0.10	(0.069)	0.10	(0.069)	0.10	(0.069)	0.10	(0.069)	0.099	(0.069)	0.10	(0.069)
Birth Setting: Urban	-0.0047	(0.048)	-0.0044	(0.048)	-0.0044	(0.048)	-0.0043	(0.048)	-0.0058	(0.048)	-0.0047	(0.048)
Region (Ref=Greater Cairo)												
Alexandria & Suez Canal	0.041	(0.077)	0.036	(0.077)	0.041	(0.077)	0.036	(0.077)	0.033	(0.077)	0.039	(0.077)
Urban Lower	-0.00022	(0.071)	0.00044	(0.071)	0.0020	(0.071)	0.00016	(0.071)	-0.0029	(0.071)	0.00028	(0.071)
Urban Upper	0.25***	(0.068)	0.24***	(0.068)	0.25***	(0.068)	0.24***	(0.068)	0.25***	(0.067)	0.24***	(0.068)
Rural Lower	0.058	(0.071)	0.059	(0.071)	0.061	(0.071)	0.059	(0.071)	0.055	(0.071)	0.058	(0.071)
Rural Upper	0.25**	(0.077)	0.24**	(0.076)	0.25**	(0.077)	0.24**	(0.076)	0.24**	(0.076)	0.24**	(0.076)
Household Wealth Index (Ref=Poorest)												
Poorer	-0.021	(0.048)	-0.022	(0.048)	-0.020	(0.048)	-0.022	(0.048)	-0.021	(0.048)	-0.020	(0.048)
Middle	-0.041	(0.052)	-0.043	(0.052)	-0.041	(0.052)	-0.042	(0.052)	-0.039	(0.052)	-0.041	(0.052)
Richer	-0.030	(0.057)	-0.033	(0.057)	-0.030	(0.057)	-0.033	(0.057)	-0.030	(0.057)	-0.030	(0.057)
Richest	-0.096	(0.065)	-0.100	(0.065)	-0.097	(0.065)	-0.099	(0.065)	-0.099	(0.065)	-0.097	(0.065)
Household Size	0.039***	(0.0064)	0.039***	(0.0064)	0.039***	(0.0064)	0.039***	(0.0064)	0.039***	(0.0064)	0.039***	(0.0064)
Husband's Age (yrs)	-0.0075*	(0.0033)	-0.0075*	(0.0033)	-0.0074*	(0.0033)	-0.0075*	(0.0033)	-0.0077*	(0.0033)	-0.0075*	(0.0033)
Husband's Education (Ref=Primary)												
None	0.0029	(0.051)	0.0028	(0.052)	0.0023	(0.052)	0.0028	(0.052)	0.0050	(0.051)	0.00083	(0.052)
Preparatory	0.031	(0.079)	0.031	(0.079)	0.031	(0.079)	0.031	(0.079)	0.036	(0.079)	0.032	(0.079)
Secondary	0.0043	(0.053)	0.0040	(0.053)	0.0053	(0.053)	0.0040	(0.053)	0.0073	(0.053)	0.0042	(0.053)
Intermediate or Higher	0.030	(0.064)	0.028	(0.064)	0.030	(0.064)	0.028	(0.064)	0.032	(0.064)	0.029	(0.064)
Husband's Employment (Ref=Employed)												

Unemployed	-0.29	(0.16)	-0.29	(0.16)	-0.29	(0.16)	-0.29	(0.16)	-0.28	(0.16)	-0.28	(0.16)
Out of Labor Force	-0.049	(0.10)	-0.047	(0.10)	-0.051	(0.10)	-0.047	(0.10)	-0.041	(0.10)	-0.045	(0.10)
Husband's Migration (Ref=No)												
No Response	-0.038	(0.051)	-0.037	(0.051)	-0.037	(0.051)	-0.037	(0.051)	-0.038	(0.051)	-0.036	(0.051)
Yes	-0.035	(0.061)	-0.033	(0.061)	-0.034	(0.061)	-0.033	(0.061)	-0.035	(0.061)	-0.034	(0.061)
Observations	3749		3749		3749		3749		3749		3749	
BIC	9018.9		9019.7		9019.0		9019.7		9015.9		9019.2	
Variance at Level 1 (Individual Level)	1.13		1.13		1.13		1.13		1.13		1.13	
Variance at Level 2 (PSU Level)	0.25		0.25		0.25		0.25		0.24		0.25	
ICC	0.047		0.046		0.046		0.046		0.043		0.046	

Notes: *p<0.05, ** p<0.01, *** p<0.001. Standard errors in parentheses

Table 6A.9 Betas and Standard Errors from Multi Level OLS Regression Models Predicting Women's Fertility (Number of Births) of Married Women Ages 15 to 49 at Wave II, 2006 and 2012 Egyptian Labor Market Panel Survey N=3,749

Key Variables	Model 7		Model 8	
	b	(SE)	b	(SE)
Individual Household Decision-Making	0.0084	(0.0079)	0.0086	(0.0086)
Joint Household Decision-Making	-0.0029	(0.0061)	-0.0022	(0.0061)
Mobility	-	-	-0.027	(0.025)
Financial Autonomy	-	-	-0.00064	(0.038)
Gender Attitudes	-	-	-0.049	(0.027)
Domestic Violence Attitudes	-	-	0.00066	(0.0074)
Births 2006	0.61***	(0.011)	0.61***	(0.011)
Age (yrs)	-0.017***	(0.0044)	-0.017***	(0.0044)
Education (Ref=Primary)				
None	0.030	(0.060)	0.031	(0.060)
Preparatory	0.045	(0.082)	0.049	(0.082)
Secondary	0.018	(0.062)	0.029	(0.062)
Intermediate or Higher	0.068	(0.078)	0.085	(0.079)
Mother's Education (Ref=Primary)				
None	-0.12	(0.19)	-0.11	(0.19)
Preparatory or Higher	-0.12**	(0.043)	-0.12**	(0.043)
Older than 18 at First Marriage	-0.071	(0.041)	-0.073	(0.041)
Dowry (Ref=None)				
No Response	0.032	(0.041)	0.035	(0.041)
Some	0.0031	(0.037)	-0.0029	(0.037)
Marriage Process Duration (Months)	0.00071	(0.0012)	0.00066	(0.0012)
Related to Husband	-0.047	(0.033)	-0.049	(0.033)
Ever Worked	-0.00022	(0.063)	-0.0024	(0.063)
Employment (Ref=Employed)				
Unemployed	0.049	(0.092)	0.055	(0.092)
Retired	0.10	(0.069)	0.10	(0.069)
Birth Setting: Urban	-0.0049	(0.048)	-0.0069	(0.048)
Region (Ref=Greater Cairo)				
Alexandria & Suez Canal	0.042	(0.077)	0.046	(0.077)
Urban Lower	0.0029	(0.071)	0.0025	(0.071)
Urban Upper	0.25***	(0.068)	0.27***	(0.069)
Rural Lower	0.061	(0.071)	0.058	(0.072)
Rural Upper	0.25**	(0.077)	0.26***	(0.078)
Household Wealth Index (Ref=Poorest)				
Poorer	-0.021	(0.048)	-0.017	(0.048)
Middle	-0.041	(0.052)	-0.035	(0.052)
Richer	-0.031	(0.057)	-0.024	(0.058)
Richest	-0.098	(0.065)	-0.094	(0.065)
Household Size	0.040***	(0.0064)	0.040***	(0.0064)
Husband's Age (yrs)	-0.0074*	(0.0033)	-0.0076*	(0.0033)
Husband's Education (Ref=Primary)				
None	0.0027	(0.051)	0.0025	(0.052)
Preparatory	0.031	(0.079)	0.038	(0.079)
Secondary	0.0045	(0.053)	0.0094	(0.053)
Intermediate or Higher	0.029	(0.064)	0.036	(0.064)
Husband's Employment (Ref=Employed)				
Unemployed	-0.29	(0.16)	-0.29	(0.16)
Out of Labor Force	-0.050	(0.10)	-0.046	(0.10)
Husband's Migration (Ref=No)				
No Response	-0.038	(0.051)	-0.039	(0.051)
Yes	-0.035	(0.061)	-0.038	(0.061)
Observations	3749		3749	
BIC	9026.8		9054.0	
Variance at Level 1 (Individual Level)	1.13		1.13	
Variance at Level 2 (PSU Level)	0.25		0.24	
ICC	0.047		0.045	

Notes: *p<0.05, ** p<0.01, *** p<0.001. Standard errors in parentheses

Table 6.A10 OLS Regression Models Predicting Number of Births for Ever Married Women Ages 15 to 49, 2008 Egyptian Demographic and Health Survey N=14,756

Key Variables	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6	
Individual Household Decision-Making	0.082***	(0.012)	0.071***	(0.012)	-	-	-	-	-	-	-	-
Joint Household Decision-Making	-	-	-	-	0.054***	(0.0076)	0.025***	(0.0075)	-	-	-	-
Domestic Violence Attitudes	-	-	-	-	-	-	-	-	0.041***	(0.0089)	0.042***	(0.0088)
Contraceptive Use	-	-	0.56***	(0.027)	-	-	0.55***	(0.027)	-	-	0.57***	(0.027)
Age (yrs)	0.12***	(0.0030)	0.12***	(0.0029)	0.12***	(0.0030)	0.12***	(0.0029)	0.12***	(0.0030)	0.12***	(0.0029)
Education (Ref=Primary)												
None	0.13	(0.071)	0.13	(0.069)	0.14	(0.071)	0.13	(0.069)	0.11	(0.072)	0.12	(0.069)
Preparatory	0.049	(0.077)	0.047	(0.075)	0.039	(0.077)	0.041	(0.075)	0.037	(0.077)	0.036	(0.075)
Secondary	-0.023	(0.072)	-0.035	(0.069)	-0.022	(0.072)	-0.033	(0.069)	-0.012	(0.072)	-0.026	(0.069)
Technical Secondary	0.0066	(0.070)	-0.022	(0.067)	-0.0068	(0.070)	-0.027	(0.067)	0.021	(0.070)	-0.0080	(0.067)
Intermediate or Higher	-0.14	(0.080)	-0.16*	(0.077)	-0.15	(0.080)	-0.17*	(0.078)	-0.12	(0.080)	-0.14	(0.077)
Older than 18 at First Marriage	-0.79***	(0.032)	-0.80***	(0.032)	-0.79***	(0.032)	-0.79***	(0.032)	-0.79***	(0.032)	-0.79***	(0.032)
Ever Worked	-0.17***	(0.033)	-0.18***	(0.033)	-0.17***	(0.033)	-0.17***	(0.032)	-0.17***	(0.033)	-0.17***	(0.032)
Christian	-0.27***	(0.064)	-0.28***	(0.064)	-0.26***	(0.065)	-0.27***	(0.064)	-0.25***	(0.063)	-0.27***	(0.062)
Sons	1.21***	(0.038)	1.03***	(0.036)	1.20***	(0.038)	1.03***	(0.036)	1.22***	(0.038)	1.04***	(0.036)
Birth Setting: Urban	-0.19**	(0.068)	-0.22***	(0.067)	-0.24***	(0.070)	-0.26***	(0.069)	-0.22**	(0.068)	-0.25***	(0.067)
Region (Ref=Greater Cairo)												
Urban Lower	0.0024	(0.048)	0.010	(0.047)	-0.027	(0.048)	-0.0082	(0.047)	-0.015	(0.048)	-0.0059	(0.047)
Urban Upper	0.26***	(0.059)	0.29***	(0.059)	0.28***	(0.059)	0.30***	(0.059)	0.26***	(0.059)	0.28***	(0.059)
Rural Lower	-0.081	(0.079)	-0.11	(0.078)	-0.15	(0.081)	-0.15	(0.080)	-0.12	(0.079)	-0.14	(0.078)
Rural Upper	0.33***	(0.069)	0.38***	(0.069)	0.31***	(0.072)	0.37***	(0.071)	0.28***	(0.070)	0.34***	(0.069)
Household Wealth Index (Ref=Poorest)												
Poorer	-0.20***	(0.048)	-0.18***	(0.047)	-0.19***	(0.048)	-0.18***	(0.047)	-0.18***	(0.049)	-0.17***	(0.048)
Middle	-0.11*	(0.051)	-0.11*	(0.050)	-0.13*	(0.052)	-0.12*	(0.051)	-0.10*	(0.052)	-0.10*	(0.050)
Richer	-0.19***	(0.054)	-0.18***	(0.053)	-0.21***	(0.055)	-0.20***	(0.053)	-0.17**	(0.055)	-0.17**	(0.054)
Richest	-0.31***	(0.064)	-0.32***	(0.063)	-0.33***	(0.064)	-0.34***	(0.063)	-0.29***	(0.065)	-0.30***	(0.063)
Household Size	0.12***	(0.016)	0.11***	(0.015)	0.12***	(0.015)	0.11***	(0.015)	0.11***	(0.016)	0.11***	(0.015)
Husband's Age (yrs)	-0.0050*	(0.0022)	-0.0023	(0.0022)	-0.0040	(0.0022)	-0.0019	(0.0022)	-0.0051*	(0.0022)	-0.0023	(0.0022)
Husband's Education (Ref=Primary)												
None	-0.088	(0.065)	-0.052	(0.066)	-0.059	(0.065)	-0.035	(0.066)	-0.083	(0.065)	-0.048	(0.066)
Preparatory	-0.012	(0.066)	-0.022	(0.067)	0.0087	(0.066)	-0.0062	(0.067)	0.0015	(0.066)	-0.012	(0.067)
Secondary	-0.067	(0.063)	-0.074	(0.063)	-0.057	(0.063)	-0.067	(0.063)	-0.061	(0.062)	-0.070	(0.063)
Technical Secondary	-0.099	(0.057)	-0.097	(0.058)	-0.095	(0.057)	-0.094	(0.058)	-0.092	(0.057)	-0.090	(0.058)
Intermediate or Higher	-0.061	(0.066)	-0.069	(0.066)	-0.077	(0.066)	-0.079	(0.066)	-0.061	(0.066)	-0.068	(0.066)

Notes: *p<0.05, ** p<0.01, *** p<0.001. Standard errors in parentheses

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