2014

The effect of free primary education programs on marriage for Kenyan women.

Joanna Eisele
University of Central Florida

THE EFFECT OF FREE PRIMARY EDUCATION PROGRAMS ON MARRIAGE FOR KENYAN WOMEN

by

JOANNA EISELE
M.A. University of Central Florida, 2011

A dissertation submitted in partial fulfillment of the requirements
for the degree of Doctor of Philosophy
in the Department of Sociology
in the College of Sciences
at the University of Central Florida
Orlando, Florida

Fall Term
2014

Major Professor: James Wright

ABSTRACT

This dissertation investigates the effect of education on the chances and age of marriage during the transition from adolescence into young adulthood among Kenyan women age 15-22. Women who receive more education are more likely to delay marriage. The literature suggests that occupation and age at sexual debut are also significantly associated with age of marriage. This study considers how these and other factors may possibly affect the life course of women in Kenya over a period of time and increases our understanding of marriage predictors. Data comes from the 2003 and 2008 Kenya Demographic and Health Surveys. Binary logistic and OLS regression models are used to analyze and compare the data. The results imply that while education has a statistically significant and strong positive effect on a woman's marital status as well as age of marriage, the effect of education on age of marriage has not changed since the introduction of Kenya's free primary education program.

ACKNOWLEDGMENTS

My dissertation evolved over the years through the support and interaction of many colleagues, friends, and family. My affection for global issues spans two decades and while my interests have always been quite varied, the plight of women across the globe has always captured my attention.

I want to express my gratitude to Dr. Heili Pals for investing so much of her time teaching me everything I know (and don't know!) about statistical analysis. She made me want to do better. The number of hours spent on her assignments was astronomical, and I have never ever pushed my brain so hard. Our time together creating this project and the syntax needed to complete it was invaluable. And I am thankful to her for pushing me so hard. I secretly call her the Iron Hammer! I would also like to thank Dr. James Wright for his patience, encouragement, and support. Write on! I also thank all my committee members, including Dr. Scott Carter and Dr. Fernando Rivera, for reminding me to stay focused, take a stand, be clear, and find my voice. Thank you to Traci Milbuta for always having the right answers and keeping me on task!

I want to acknowledge my family for the sacrifices they have made over the years to make this doctorate happen. Countless hours of missed family time and bleak moments were made bearable because of their support and belief in me. There were times I never thought I could do this, and really wished that I hadn't, but they never once stopped encouraging me. To my beautiful and amazing children, Ava and Connor, I love you more than you will ever understand. Thank you for loving an often grumpy and exhausted mommy and for being so patient with me! To my husband, Stephen, this is one of many journeys we have taken together over the past 24 years, and it has been one of the hardest. Thank you for always having my back and for encouraging me to go on when I felt that I could not, and for believing in me when I

didn’t believe in myself. You are, and have always been, my rock. I do not know what adventures await us but I am sure that we will find a way to enjoy them because we will be in it together. I love you more. To my parents, Robert and Karen Searle, thank you for always listening to me vent, for raising me to be such a persistent person, and for always believing in me.

Finally, I want to thank my friends for their love and support. Thank you to Wendi Kane for being my mentor and friend; you have no idea how amazing you are. You inspire me to no end! And to my best friend Candice Campanaro, I never expected to find you, and here you are. We have survived this together and having you next to me while enduring this program has been priceless.

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CHAPTER ONE: INTRODUCTION

Marriage is an important marker in society. For the individual, it is a significant life event and is often a catalyst in the creation of families. It is also a rite of passage that separates individuals from their parents and marks the entrance into adulthood (Quisumbing & Hallman, 2003). In most societies marriage is a key transition in one's life course. It is also widely considered an important part of building a foundation for both social and economic independence from one's parents (Quisumbing & Hallman, 2003; Wu, 1996; Eder, 1995)

Getting married is a significant life event and there are many factors in play before one ever considers marriage that affects the age at which one chooses to transition into marriage. Age at marriage is of particular interest to sociologists because in many societies it not only marks the start of adulthood, but it also often marks the point where educational opportunities, specifically for women, are foreclosed (Sawamura & Sifuna, 2008). Additionally, marriage often marks the start of childbearing and so it directly affects fertility rates (Ikamari, 2005) which is of great concern to developed nations. Fertility often times plays a powerful role in guiding, funding, and developing economic and social policy in developing countries (Ikamari, 2005; Sen, 1999).

Marriage is a crucial event in the life course and several factors have been empirically shown to impact the transition into marriage. The current literature suggests that education is one of the most important factors affecting marriage (Sawamura & Sifuna, 2008; Ikamari, 2005; Singh & Samara, 1996). This study primarily examines the changing impact of education on life outcomes. Kofi Annan stated that "there is no tool for development more effective than the education of girls" (2003). Bellamy (2003) a former director for UNICEF expands on the importance of education and suggests that educating a girl will "transform her life. It will offer her learning and an expanded sense of her own potential, increasing her self-confidence, her

social and negotiation skills, her earning power and her ability to protect herself against violence and ill health. Education will open up the world to her….If the school gates remain shut and barred to this young girl, the gulf between her and the woman she could have become will widen" (p. 11).

If we accept this perspective then it is no surprise that education is viewed by many as a panacea for many social ills including early marriage. Early marriage is considered by the west (i.e. more developed nations) to be morally undesirable (Sawamura & Sifuna, 2008; Singh & Samara, 1996; Alexander & Reilly, 1981). Marrying young also acts as a barrier to education (Jensen & Thornton, 2003). In other words, marriage and schooling are incompatible; marrying young results in termination of education while continuing one's education results in the delay of marriage (causation is therefore not unidirectional).

Early marriage is also associated with high fertility rates and enduring poverty (Ikamari, 2005). High fertility rates place a serious burden on government finances. Therefore if increasing education delays marriage, which ultimately decreases fertility and leaves women ready to enter the work force, it is no surprise that governments view education as an investment in human capital.

Education is being pushed by both developing and developed countries (as evidenced in the Millennium Development Goals as well as Kenya's Free Primary Education Program) and because of this we can expect the effect of education on marrying age to increase over time. Created by the United Nations, the eight Millennium Development Goals (MDGs) form a "blueprint agreed to by all the world's countries and all the world's leading development institutions" (UN.org). MDG's "remain the primary reference point for global development milestones" (Ferguson, 2015; p.3). One of these important milestones is primary education. The

second of these eight goals aims to ensure that, by 2015, all children, regardless of their gender, will complete a full course of primary schooling (UN.org). MDG2 is meant to motivate governments to properly fund schools and provide supplies and technical supplies to teachers (Ferguson, 2015).

Kenya's attempt to comply with this goal comes in the form of their Free Primary Education Program (FPE). The FPE program was introduced in 2003 and ensures that primary education in Kenya is both free and compulsory; attendance rates at almost all primary schools soared quickly after its implementation (Sawamura & Sifuna, 2008). It is important to note that both the MDGs and the FPE are only concerned with primary (or elementary) education. Neither addresses the importance of increasing attendance rates in secondary schools.

Singh and Samara (1996) suggests that it is "socioeconomic development" that predicts marrying age. The authors suggest that the literature essentially defines socioeconomic development as a trilogy of factors consisting of: the acquisition of education, urbanization, and labor force participation. This study considers these components of development as they are understood by Singh and Samara. Hence the relationship between education, childhood place of residency, occupation and marriage are of fundamental importance in this study.

Data is drawn from the 2003 and 2008-09 Kenya Demographic and Health Survey to create an experimental design that compares the effects of these factors on marrying age between two cross-sections of young school aged women over the span of five years. The hope is to better understand if, and how, the free primary education program has affected the traditional life course for women in Kenya. In other words do improvements in education change the expected life course of women in Kenya by delaying their entry into marriage.

The story in Kenya

In Kenya, education has long been thought of as the key to raising women out of poverty but until recently not much has been done to ensure all women have access to education (Sawamura & Sifuna, 2008; Wolf, 2004; Psacharopoulos, 1994). Kenya has long suffered low levels of enrollment in both primary and secondary schooling (Gichura, 2003). It can be argued that in Kenya education has not been accessible to all and because of this a gender and wealth gap in educational attainment persists (Aina, 2004). There is also considerable disparity between urban and rural education (Cockerham & Cockerham, 2010).

The colonial education system was set up by the British in the 1800's and segregated ruling Europeans from Asians and native Africans. Most social services established by British colonists were located only in urban areas, which have to this day left those in rural centers lacking access to education (Aina, 2004). One cannot attend school if there is no school to attend. Although independent of the British since 1963 Kenya's colonial past still influences its present; until 2003 access to education was still unavailable to many young girls (Keriga & Bujra, 2009). While girls are allowed schooling now, regions with low overall school attendance rates (mostly rural) experience the most significant gender disparities (Sawamura & Sifuna, 2008). In order to address these issues and comply with Millennium Development Goal 2 the Kenyan government implemented the Free Primary Education program in 2003.

But little research has considered the relative effect of the Free Primary Education program on Kenyan women's life outcomes; specifically their age at marriage. In Kenya marriage and schooling seem to be mutually exclusive; early marriage undoubtedly reduces educational attainment, just as more education postpones marriage (Elman & O'Rand, 2004). This means that early marriage is likely to be a significant barrier to women's education (Jensen

& Thornton, 2003; Alexander & Reilly, 1981). There is most definitely an issue of reciprocal causation at play in this story; there are two factors at work simultaneously. I argue that in Kenya, where women already struggle to get a basic education, the educational opportunities they have (or don't have) greatly affect their marrying age which in turn affects their life course trajectories.

Conventional expectations of Kenyan women

Life course trajectories obviously vary across the world; normative schedules of achievement vary globally and every society has a general expected or acceptable timing of major life events (O'Rand, 2002). The conventional order and timing of life events are dependent on many factors (Elder, 1985). It follows that what constitutes the ideal marrying age also varies across the world. The perceived benefits of being married are distinctly different globally; the developed world tends to believe that marrying young is detrimental to women and should be avoided (Sawamura & Sifuna, 2008), while people in the developing world view early marriage in a more positive light (Jensen &Thornton, 2003).

Marriage, in both the developed and developing world, offers security for women who are transitioning into young adulthood and leaving the safety of their families (Quisumbing & Hallman, 2003; Elder, 1995). In the developing world, where the economic and social environment may be perceived as unstable, marrying early may be the rational thing to do- even if getting married means forgoing educational opportunities (Jensen & Thornton, 2003; Alexander & Reilly, 1981).

Jensen and Thornton (2003) suggest that in Kenya, daughters are an economic burden for their parents and delaying marriage so that a daughter may continue school is difficult choice for parents to make. Additionally the authors suggest that many men may feel pressured to marry

younger women believing that the most desirable brides marry early. This means that a parent that delays marriage for a daughter so that she has increased educational opportunities may actually be harming their daughter's marriage chances.

While marriage offers security for women across the globe, the average life course of women obviously varies dramatically in the developed and developing world. In the United States the average life course is quite different from that of women in Kenya. Life expectancy is much higher in the U.S. than in Kenya (79 years compared to 65 years) and so this difference results in a more condensed sequencing of life events for Kenyan women. In the United States women are generally expected to finish school; nearly 88% of women finish high school. And in the United States it is at this point that adulthood begins. Most women then find a career, a partner, get married, begin a family, and eventually retire from work around age 65 (Ryan & Siebens, 2012; Miller & Heaton, 1991). The average marrying age for women in the U.S. is 27 years old.

For women in Kenya the timeline of the life course is markedly different. Women on average attain less than seven years of education and finish school between ages 12 and 13. This is the point at which adulthood begins (Jensen and Thornton, 2003). Women then either find work or find a partner and marry. The average Kenyan woman marries near age 17, a full ten years earlier than their U.S. counterparts, and the majority of women do not work outside the home (CIA World Factbook, 2014).

However, the timing of family formation in Africa is changing profoundly; the period between puberty and marriage is expanding because of increased education and increased urbanization (Magadi & Agwanda, 2009). The implementation of the FPE program may contribute to changing in family formation patterns.

Research questions and plan for dissertation

This study follows an experimental design and answers the following question: Is the accumulation of education a significant predictor of life course patterns; specifically have the odds or the age of marriage changed since the introduction of free primary education? Additionally, this study aims at establishing the effects of other factors that have been found to be significantly associated with a woman's odds of and age at marriage including occupation, childhood place of residence, and age at sexual debut. I examine the effect of occupation (formal and informal sector vs. not working) on marrying age. I also consider in what ways does where one grew up affect marrying age and in what ways the effect of education moderates this relationship. Finally, I consider the role sexual debut plays in determining at what age women marry. I also again consider the moderating effect education has on this relationship.

This study uses data drawn from the Kenya Demographic Health Surveys (KDHS) of 2003 and 2008-09 and includes women between the ages of15-22. It uses a two pronged approach to explore the effects of these factors on women's age at marriage by comparing demographic data from 2003 with equivalent data from 2008-09. The first analysis looks at who is married and who is not at this young time in life and includes nested logistic regression models. The second then asks, for those who are already married, what factors are correlated with age at marriage, and how do these factors effect a woman's age at marriage. This analysis includes OLS regression. Additionally the data sets are pooled to examine whether or not the effects of these factors have changed since the implementation of FPE. The questions on these surveys are very standardized, as are sampling methods, which makes cross-time comparison possible. See the Chapter 4 for details on data, sampling, and methods.

The aim of this analysis is to better understand how "socioeconomic developments" act as cumulative advantages/disadvantages for young women, and how life course patterns of young Kenyan women change as they gain greater access to education, move to urban areas, and enter the labor force. The hope is that this research can contribute to our understanding of what factors affect the age women marry in Kenya and how things may or may not have changed over the course of a few years since the introduction of free and compulsory primary schooling by the Kenyan government in 2003.

The following chapters shed light on young women's life courses in Kenya in 2003 and 2008. Chapter 2 presents the two theories that guide this research: life course theory and cumulative advantage/disadvantage theory. It also introduces and provides support for the hypotheses. Chapter 3 presents the larger context of the paper and provides support for the inclusion and selection of the independent and control variables. The first section considers support for education's primary explanatory role in predicting age at marriage. In the next section I consider the validity of the "urban advantage" and suggest that the urban-rural dichotomy sociologists are accustomed to using may not be useful in a country like Kenya. I then present three explanations for parental non-compliance with the FPE, and I suggest that there is little motivation for parents to educate their daughters when they do not believe that their education results in increased occupational opportunities. The next section adds another layer of complexity by considering the effect of sexual debut on age of marriage. I then introduce control variables. These include age, religion, and media exposure. Chapter 4 presents all information regarding data, coding, methodology. Chapter 5 presents my findings and discussion of the data. Conclusions are presented in Chapter 6.

CHAPTER TWO: THEORY

I am interested in if, and why, the life courses of young Kenyan women have changed since the country introduced their Free Primary Education (FPE) program. More specifically, I am interested in marriage as a major life course transition and the factors that affect it. There are two theoretical perspectives that guide this research: life course theory and cumulative advantage/disadvantage theory. These two theoretical perspectives work well together as the trajectory of one's life course is in large part determined by the opportunities (i.e. advantages/disadvantages) one has. Life course theory is concerned with changes in life trajectories and cumulative advantage and disadvantage theory is useful in understanding how socio-economic development opportunities affect a woman's entrance into marriage as well her age at first marriage. Together these two theories form the foundation of this research.

The literature suggests that a variety of life course events are empirically linked to the timing of marriage (Quisumbing & Hallman, 2003; Giele & Elder, 1998; Wu, 1996; Elder, 1995; Alexander & Reilly, 1981). Additionally these life course events can be understood as cumulative advantages or disadvantages that affect marriage timing (Mayer, 2009; Elman & O'Rand, 2004; O'Rand, 2002). Elder (1995, 1985) suggests that by examining the impact of early life transitions on later life transitions we can better understand the consequences of cumulative advantages and disadvantages which are associated with certain life transitions. This dissertation examines the impact of educational attainment, childhood residence, occupation, and sexual debut on the timing of marriage. These variables act as cumulative advantages/disadvantages and help predict major life course transitions, specifically marriage.

Life course theory

Life course is a complex phenomenon and is quite fluid in nature. In other words, where and when you live impacts your life and helps "to set the stage for life chances and personal wellbeing throughout one's life" (Wu, 2003: 478). This theoretical perspective is utilized for this project as my research focuses on how patterns of marriage have changed for women who were school aged before FPE was enacted compared to women who were school aged five years post-FPE.

The life course is not simply a collection of events or transitions but is the accumulation of these experiences over the lifetime (Giele & Elder, 1998; Elder, 1985). The "where and when" in a woman's life is crucial in this analysis and I use cross-sectional data from two different time points in time to see if the introduction of free compulsory education has changed the life course. In the case of Kenya I consider the Free Primary Education program as a historical force that has affected the life course trajectory (specifically marrying age) of the cohort of young women who were in school after its implementation. The goal of this dissertation is to understand how marrying age has changed for two identically aged cohorts; one which lived pre-FPE (2003) and one which lived post-FPE (2008-09).

The life course is defined by Giele and Elder (1998) as "a sequence of socially defined events and roles that the individual enacts over time" (p. 22). This means that the life course is the order and time frame in which individuals accomplish (or fail to accomplish) certain events or transitions including finishing school, finding employment, getting married, or having children. Giele and Elder suggest that the life course is in part determined by early life experiences, future choices, and one's cohort. In other words, opportunities (or the lack thereof)

to experience a "standard" or "traditional" life course are influenced by one's environment and one's history.

From this perspective lives are always in motion; and individuals follow fluid evolving paths. By examining the impact of early life transitions (educational attainment and childhood residency) on later life transitions (marriage), this perspective attempts to understand the consequences of cumulative advantages and disadvantages associated with certain life transitions. One's adaptations to life events or transitions obviously influence the trajectory of one's life course (Elder, 1985).

There are four main principles that define the life course perspective. These are historical time and place, the timing of lives, linked or interdependent lives, and human agency (Elder, 1985). The first and second principles guide my understanding of how the perspective can be used to explain how the life course trajectories of Kenyan women are shaped and how they change over time.

The paradigm posits that the life course trajectory of an individual is mainly a product of larger social forces and structures; in other words, macro forces ultimately guide the life course of individuals (Ulrich & Tuma, 1990). The importance of historical time and place and the macro forces at play at the time cannot be negated. Where and when a person lives shapes their behavior and development (Elder, 1985). By acknowledging that historical forces are always shaping the life course we can consider the full span of one's life from childhood to adulthood.

The vast majority of the literature on the timing of marriage focuses on the effect of macro level factors (Sawamura & Sifuna, 2008; Jensen & Thornton, 2003; Singh & Samara, 1996). The life course is primarily determined by macro forces like education, residency, and

occupational opportunities. This dissertation considers the ways the effects of these macro level factors have changed since the implementation of FPE in 2003.

While historical time and place are critical to this analysis, I would be remiss to not acknowledge that micro forces still play a role in life course patterns and trajectories. Variations from the "standard" or predictable life course occur, and these variations reflect the experiences at the individual or micro level. It goes without saying that humans do not follow one prescribed path in their lives, but patterns definitely do exist (Ulrich & Tuma, 1990). Human agency, though not primary in this analysis, also plays a role in life course perspectives. The perspective is respectful of the role of individuals in determining their own path in their lives and acknowledges that humans have the ability to make choices and take actions towards determining their own life course.

Human agency suggests that this can be done despite the pressures and constraints of history and society. This means that while individuals may experience certain events or experiences in their childhood that may suggest a certain path be followed through adulthood, that individual still has the choice and capacity to create a new and unpredicted path (Giele & Elder, 1998). In other words, certain events or experiences that occur during childhood do not necessarily "doom" an individual to a certain life course. However, some individuals are better at expressing agency or free will than others. And most choices involving the life course are not made in a vacuum; individuals are limited by a variety of social or cultural controls that ultimately constrain their opportunities to choose their life course (Ulrich & Tuma, 1990).

Cumulative advantage/ disadvantage (CAD) theory

Life course perspectives obviously have logical, theoretical, and empirical connections to cumulative advantage/ disadvantage (CAD) theory. Both are middle-range theories with

multilevel features. Both perspectives include the examination of the relationship between people's lives and structural macro level constraints (Elder, 1994; Riley, Foner, & Waring, 1988; Riley, 1987). A major focus of life course perspectives is on how the timing and order of certain events influence or change the trajectory of the life course (Elder, 1985). The timing and order of life course events are ultimately quite dependent upon experiences with cumulative advantage and disadvantage (i.e. access to school, access to labor force, place of residence, income, etc.).

The concept of cumulative advantage is a familiar one. Cumulative advantage is also commonly known as the "Matthew effect," from Matthew 25:29 in the King James Bible, which states that 'to him who hath shall be given; from him who hath not shall be taken away that which he hath.' The Matthew effect reinforces "vicious and benign circles" of development where advantage early in life begets more advantage later in life (Smith, 1968).

Life course perspective theory incorporates the theory of cumulative disadvantage by considering the effect of cumulative advantages/disadvantages on the life course. In other words, it considers how past opportunities (or lack of opportunities) shape an individual's present and future choices. CAD can be usefully linked with life course perspectives in that opportunities and historic conditions in early life shape outcomes later in life. Inequalities both between and within cohorts (owing to a given advantage or disadvantage) occur over time and ultimately influence individual life course patterns (Mayer, 2009).

This means that early life transitions can have enduring consequences by affecting subsequent life transitions, and the consequences can last for years by setting in motion advantages and disadvantages that accumulate (Elder, 1998). Consequently, the literature suggests that early achievements in education impact later educational attainment as well as economic attainment (Elman & O'Rand, 2004; O'Rand, 2002). In other words, early access to

educational resources enables individuals to pursue higher levels of education, which then has an impact on future life course events, including occupational attainment and marriage (Elman and O'Rand, 2004; Alexander & Reilly, 1981).

Educational attainment has a significant impact on the transition to marriage (Quisumbing & Hallman, 2003; Wu, 1996; Eder, 1995). Alexander and Reilly (1981) suggest that early marriage is detrimental to the educational attainments of women. In other words women who marry early do not generally continue their education after marriage. Magadi and Agwanda's (2009) research on life course events and marriage confirms these findings and suggests that the reverse is also true; increased education delays the transition to marriage.

Having access to the FPE program is therefore assumed to constitute a cumulative advantage for women who attend school after its implementation (i.e. the respondents in the 2008 data set). I suggest that young women who were school aged before the implementation of FPE were at a disadvantage and that their lack of access to education may have created a cumulative disadvantage that went on to affect other life transitions (i.e. marriage). This research has led me to hypothesize that Kenya's Free Primary Education program has the *potential* to delay the transition into marriage. I hypothesize that:

> H1.1: The introduction of free primary education lowers the odds of marrying by age 22.
> H1.2: The introduction of free primary education increases the age of marriage.
> H1.3: The negative effect of education on the odds of marrying by age 22 is greater after the introduction of free primary education as compared to before the introduction.
> H1.4: The positive effect of education on the age of marriage is greater after the introduction of free primary education as compared to before the introduction.

Cumulative advantage/disadvantage theory can also be used to understand the role residency may play in life course opportunities. Life course patterns are different in rural areas than in urban areas (Ikamari, 2005; O'Rand, 2002; Singh & Samara, 1996). It is widely believed that women who grow up in rural regions have lower access to schools and hence carry this

cumulative disadvantage with them throughout their life course (Magadi & Agwanda, 2009). Singh and Samura (1996) suggest that urbanization is an advantage that ultimately delays the transition into marriage. In rural areas there is lower exposure to media and fewer educational opportunities and women tend to marry earlier (Ikamari, 2005; Singh & Samara, 1996). The literature suggests that living in rural areas has a negative effect on marrying age compared to living in urban areas. Hence I hypothesize that:

> H2.1: Growing up in urban areas decreases the odds of marrying by age 22 compared to growing up in rural areas.
> H2.2: Growing up in urban areas increases the age of marriage compared to growing up in rural areas.

However, educational attainment *can* moderate the effect of disadvantageous early life conditions; i.e. living in rural areas (Sawamura & Sifuna, 2008; O'Rand, 2002). In other words, education can have a stronger positive effect on age of marriage and a stronger negative effect on odds of marriage in rural areas than in urban areas. I suggest that those rare young women growing up in rural areas who are able to achieve a solid education may use that education as a tool to "escape" the "traditional" life course (which may entail little schooling, marrying young, and not entering the labor force). This literature supports my hypothesis that the effect of residency is moderated by education.

> H3.1: The negative effect of education on odds of marrying before age 22 is stronger for women who grow up in rural areas compared to women who grow up in urban areas.
> H3.2: The positive effect of education on age of marriage is stronger for women who g row up in rural areas compared to women who grow up in urban areas.

Women in urban areas (more specifically in urban slums) also lack adequate access to schooling. Chapter 3 further investigates the assumptions and limitations of the urban advantage. My hypotheses reflect the current literature that supports residency as an advantage that delays

marriage while my personal thoughts on residency generally run counter to implicit assumptions about the differences between urban and rural life.

Work also impacts the timing of marriage and marriage patterns often fluctuate over time due to changes in migration patterns or due to increases or decreases in economic opportunities. Work is such an important influence in structuring the life course; career uncertainties can affect one's attitudes about marriage and family formation (Oppenheimer, 1997). In difficult economic times "marriage rushes" are common as women, especially those unemployed, seek financial security through the acquirement of a partner (Modell et. al, 1978). It follows that women who are employed may not feel as rushed into marriage during hard times as those who are unemployed.

In Kenya where unemployment rates are so high I expect that employment status effects marriage. The underlying assumption is that having a job leads to economic independence; increases in women's economic independence *may* then result in delays in marriage (Oppenheimer, 1997 and 1988). Singh and Samara (1996) suggest that not only does working provide a woman with the means to delay marriage it also exposes her to new ideas and norms that discourage early marriage. I suggest that being employed is positively associated with marriage. The literature supports the following hypotheses:

> H4.1: Participation in the labor sector decreases the odds of marrying by age 22 compared to not working.
> H4.2: Participation in the labor sector increases the age of marriage compared to not working.

Sexual debut is another important life course event that is empirically linked to the timing of marriage as well as fertility rates (Jukes et al., 2008; Miller & Heaton, 1991). In developing countries intercourse is generally linked to cultural ideas about marriage, while in Western countries intercourse is increasingly separated from marriage (Miller & Heaton, 1991). However,

across the globe pre-marital sexual debut increases one's exposure to pregnancy and getting pregnant increases the likelihood of marriage. Pre-marital sexual debut is constructed in the literature as a cumulative disadvantage because it may limit future educational and economic opportunities, which then may lead to decreased marrying age (McGrath et. al, 2009; Biddlecom et. al, 2008). The literature supports my hypotheses that suggest that pre-marital sexual debut is negatively associated with marriage.

> H5.1: Having pre-marital sex increases the odds of marrying by age 22 compared to not having pre-marital sex.
> H5.2: Having pre-marital sex decreases the age of marriage compared to not having pre-marital sex.

Additionally, urban residency is also correlated with early sexual debut (McGrath et al., 2009; Jukes et al., 2008). In other words urban women who have pre-marital sex have different marriage patterns than rural women who have pre-marital sex. This may be because pre-marital or early sexual debut is less frowned upon in urban areas than in rural areas where sexual activity may be less socially acceptable. I suggest that:

> H5.3: The positive effect of pre-marital sexual debut on odds of marrying before age 22 is stronger for women who grow up in rural areas compared to women who grow up in urban areas.
> H5.4: The negative effect of pre-marital sexual debut on age of marriage is stronger for women who grow up in rural areas compared to women who grow up in urban areas.

The following chapter introduces the life course events that are empirically linked to the timing of marriage. It introduces each variable included in this dissertation and provides details about the situation in Kenya as well as additional support for the hypotheses explained in this chapter. It also provides some cultural context for the reader as well as well as additional literature to support the inclusion of the explanatory variables.

CHAPTER THREE: EXPLANATORY FACTORS

Kenya claimed their independence from the British Empire in 1963. The British were strong proponents of education, and their colonial legacy reflects this as literacy rates in Kenya remain high (Keriga & Bujra, 2009). The education system in Kenya, both during colonial times and today consists of three levels of education. Primary school lasts eight years, secondary lasts four years, and tertiary education consists of four additional years of education. The curriculum in primary school includes basic literacy and writing skills, basic numeracy skills, as well as basic health education.

The push from the west: how we understand the importance of education

Although independent of the British for over 50 years, Kenya's colonial past still influences its present; access to educational opportunities are not equally distributed across the country. A gender and wealth gap still exists, just as it did in colonial days (Shimada, 2010). The gender gap has begun to shrink as girls are allowed greater access to schooling now. However, regions with low *overall* school attendance rates experience the greatest gender disparity (Sawamura & Sifuna, 2008). Girls in Kenya average 5.2 years of schooling while boys have a slightly higher average of 6.0 years of schooling (Shimada, 2010). This means that most children are approximately 12 years old when they stop attending school. What these children do when they leave school is relatively unknown and under documented. There is a great absence of data as to what kind of jobs girls get when they exit school (King, 2003). World Bank data suggests that across Sub-Saharan Africa most exiting female students end up in the informal labor sector which includes mainly low-skilled jobs (Johanson & Adams, 2003). Since only women age 15 or

older are included in the data for this project, I am unable to make any claims about occupational opportunities these young women may have before age 15.

Why education is the primary explanatory variable

There are many factors that cause the low rates of educational attainment for women in Africa, including unequal access to education, prioritizing male children's education over that of female children, and a lack of funding for public schools (un.org). The United Nations Development Programme (UNDP) created the Millennium Development Goals in an effort to address these issues. The second of these eight goals is universal primary education. In an attempt to satisfy the internationally created Millennium Development Goal for education, Kenya enacted the Free Primary Education (FPE) program under Kenya Constitution Article 53 in 2003. This abolished all fees and charges levied to parents for primary schooling (Sawamura & Sifuna, 2008). Primary education is now both compulsory *and* "free," thus providing primary (or elementary) education to millions of marginalized children who previously could not afford to attend. Essentially, FPE has allowed young children who have never been enrolled in school to begin their educations. This means that in families where only some of the school aged children attended schools because of the high costs, all of the children in the house can potentially now attend.

There have been marked improvements in education since independence; enrollment of girls in primary schooling has increased rapidly (especially over the last 20 years) and the recent implementation of the FPE program has helped to reduce the cost of schooling. Kenya has slowly come to realize that improvements in the education sector will help increase the availability of skilled labor. These improvements are believed to result in economic growth,

which then can lead to improvements in the social welfare of the Kenyan population overall (Muganda, 2002).

Increases in educational attainment are linked to a larger variety of employment opportunities, and education is also generally linked to the creation of a more productive, skilled, and literate labor force- all of which are valuable traits (Boadu, 2000; Muganda, 2002). If this is indeed the case and increased educational opportunities result in entrance into the formal labor pool, then delaying marriage is viewed as desirable. I hypothesize that working in the formal labor sector has a stronger positive effect on age at first marriage than working in the informal sector. I also suggest that women who work in the labor sector are less likely to marry than women who do not work.

Education is clearly viewed by the government as a valuable asset in the globalization process (Mills & Blossfeld, 2005) and is a tool that can help mitigate both the negative economic and social consequences associated with early marriage (Manda & Meyer, 2005). There are many reasons the Kenyan government may value the education of their citizens, all of which potentially reduce government support of citizens. Ikamari (2005) found that school enrollment is a strong impediment to early marriage, which governments may find advantageous to their financial bottom line. This dissertation presents a similar hypothesis; not only does education decrease the odds of entrance into marriage it also has a positive effect on the age of marriage.

Ikamari (2005) suggests that girls who attend school are exposed to new ideas and value systems that often compete with local traditional values that promote and value early marriage. They are also exposed to more international media and are more likely to be literate (this analysis includes an indexed control variable measuring media exposure). The westernization that

accompanies globalization may be at least partly responsible for increases in the attendance of girls, as the idea of gender equity is "imported" from the west.

And while education for education's sake may be a worthwhile endeavor (if only to enlighten and create a literate, slower growing populous) it is important to note that critics of Kenya's cooperation with international development organizations and more specifically with the MDGs suggest that FPE is simply a response to what Smith (2003) calls a "one-size fits all international imperative." Smith suggests that the global push towards increasing education focuses only on education as an essential step in nation building while ignoring educations potential (or lack thereof) to improve social equity.

Traditional ideas about appropriate gender roles still influence girls' enrollment rates as well as graduation rates and grade attainment (Boadu, 2000). Additionally, when resources are scarce and a family must make a choice of which of their children will attend school it is often the sons who are selected to attend school over the daughters. The literature on the subject tends to focus on social inequalities found in education while failing to discuss possible outcome failures in education (Villet, 2003).

Villet suggests that it is not enough to just improve the access to, and quality of, education, but that attaining an education must also lead to some improved real world opportunities; some real and very measurable outcome. He suggests that those leaving school with only a primary education do *not* secure jobs easier than those who never went to school at all. King (2003) suggests that while FPE has increased access to education it really has also created a 'poisoned chalice;' it provides basic education which makes financial donors happy, but the program has no regard or interest in outcome evaluation. In other words women who finish at least primary school may not find better jobs than women who skip primary school.

The following section explores how the perceived gap between achieving an education and occupational opportunities contributes to parental non-compliance with the FPE program.

Educational non-compliance: why education may not be the best thing for your child

Though FPE is compulsory there are many cases on non-compliance. Women may be allowed and encouraged by the government to attend school but barriers still exist. There are a variety of explanations for non-compliance to FPE programs by individual families. This dissertation will consider three of these explanations: 1) the significant indirect costs of FPE which are prohibitive to many marginalized families, 2) parental desire for some control over their child's safety as well as what kind of schooling their children receive, and most importantly, 3) the belief by many parents that their children's education may very well not result in any economic opportunities.

Free Primary Education is not really free

It is important to note that the term FPE is a serious misnomer. Even with "free" primary school parents incur direct and often prohibitive costs for school including uniforms, bags, books, and lunches. Additionally many families suffer indirect costs in the form of lost income caused by children being in school instead of working. These indirect costs affect poorer household's more than richer households because more poor children are expected to contribute to their household income or work with their parents than are children from wealthier households (Onsumu et al., 2005). Both direct and indirect costs play a role in determining parental compliance (Smith, 2003). It is important to note that direct costs for "free" schooling are not unique to Kenya or even to Africa. They affect most public schools across the globe. American

public schools experience these costs through supply purchases, bake-sales, snacks, unpaid volunteer hours, and fees for field trips; all of which result in significant additional costs to families.

Parents have no control

A second reason for non-compliance in schools offering FPE is that parents resist sending their children to free schools because they fear for their physical safety and also because they feel that if they do not contribute financially then they will have no voice in how the school is run or what type of education their children will receive (Smith, 2003). Violence against young girls, both physical and emotional, is common at public schools and perpetrators include both teachers and fellow students (Bellamy, 2003). Parents therefore are often reluctant to send their daughters to a school they perceive to be dangerous.

Additionally, many Kenyan parents feel they have no control over what kind of schooling is provided. In Kenya the term Universal Primary Education (UPE) is jokingly said to really mean 'universal poor education.' The National Alliance Rainbow Coalition (NARC) government responsible for Kenya's FPE has set limits on community and parental school involvement by eliminating traditional *harambees*. Harambees are community based events used by parents and other stakeholders to raise funds for schools and other community projects. Limiting these types of organizations effectively constrains parental involvement in their children's education (Milu, 2013).

The mismatch in economic opportunities

The third and I believe the most important reason for non-compliance stems from parental disaffection. Harbison and Myers' (1964) state that "education unlocks the door to modernization." This assumption has been at the core of education policy across Africa over 60 years. Education has been promoted as an absolutely essential step to economic development (Smith, 2003; World Bank, 1980). But many parents in Kenya do not believe education is a panacea for their children. Their concerns appear to have validity; increases in educational attainment in Kenya have occurred, but they have occurred while the Kenyan economy has shrunk (Appleton et al., 1999). In other words parents believe that increases in education have *not* resulted in real tangible economic improvements. If parents could reasonably believe that there are economic incentives to stay in school (i.e. a job in the formal sector) they are more likely to encourage their daughters to stay single and remain in school (Singh & Samara, 1996). However, many parents believe that increases in education ultimately only result in educated unemployment (Smith, 2003).

These parents have very real concerns; unemployment rates in Kenya jumped from 13% in 2007 to 40% in 2013. Increases in the supply of an educated labor force have in fact *not* been accompanied by economic expansion (Appleton et al., 1999). In the end, the mass primary education associated with FPE to some extent creates an overeducated and underemployed population leaving one wondering 'education for what?' What is the point of making education compulsory when there are no jobs available to you when you graduate**?** Additionally, if children finish primary school at age 12 to enter the work force, then keeping them in school for more years will reduce the available labor force for low-end, low-skilled jobs which, realistically, are the backbone of the Kenyan economy.

This essentially means that it does not make sense to get an education when there is such a mismatch in economic opportunity (Mugisha, 2006). Smith (2003) suggests that school disaffection is rising across Africa because schooling does not provide useful real world skills. Many of the new jobs available in Africa are low-productivity, low-skill jobs, and are based in non-tradable service industries including agriculture and natural resource extraction (McMillan & Rodrik, 2012). So while the emphasis from large international organizations, like the United Nations and UNICEF, has been on equity and access to education, these organizations fail to measure the actual usefulness of achieving said education.

In reality programs like FPE have resulted in limited returns to students. The literature has begun to shift the research focus towards the relevance and availability of real world post-educational opportunities (Jensen & Thornton, 2003; Singh & Samara, 1996). Ultimately, if there are no jobs awaiting young women who choose to further their education beyond Kenya's average of six years, then what possible motivation do they have to delay marriage? This analysis considers this question and includes an explanatory occupation variable to better understand how occupational opportunities (or the lack thereof) affect marrying age.

This is not to discount the importance of education; not only can having an education help you find a job, it can also be seen as a tool for increasing access to other opportunities that can enhance feelings of empowerment and autonomy. In Kenya education *can* offer a road out of poverty and can provide a path towards increasing social mobility and individual agency. Attempts to level the playing field by expanding educational opportunities should still be considered a worthwhile endeavor. Of course opportunities for mobility and agency are still far from equally distributed in Kenya; those living in rural settings still have less access to education than their urban counterparts (Muganda, 2002; Muthaka & Mwangi, 2002).

The urban-rural dichotomy: an outdated distinction

Although education is the primary explanatory variable in this study I also consider other potentially important explanatory variables including childhood place of residence. Kenya is divided into many different provinces or regions and there are significant differences between regions both socially and economically. Arnaldo (2004) found that marriage patterns vary widely across regions in Kenya, likely due to ethnic and cultural differences. One would therefore expect variations in the timing of marriage to exist between regions.

Urbanization in Kenya has boomed over the last 60 years. In the 1950's only 11% of the population lived in urban cities, this number is projected to reach 50% by 2025 (Brockerhoff, 2000). Urbanization occurs primarily because urban areas are often assumed to have the best educational facilities, a higher educated population, and higher overall income (Ewbank et al., 1986). These assumptions are the backbone for the concept of urban advantage.

There are a variety of commonly held beliefs about urban life. It is generally believed that women in the more developed urban regions are more educated and have more opportunities for career development outside the home than women in less developed rural regions. Hence women in cities are (or at least thought to be) advantaged. Women in urban areas across Africa tend to enter marriage later than their rural counterparts (Ikamari, 2005; Singh & Samara, 1996). This finding is at least in part due to the fact that, on average, urban women attend school longer and have higher labor participation than rural women (Smith, 2003). However, education may in fact have a stronger effect on rural children as education in these areas may function as a tool to exit traditional society and avoid early marriage (Sawamura & Sifuna, 2008). In other words in rural areas in Africa, attending school may ultimately protect children from early marriages. To test this hypothesis a moderation effect between residency and education is included in this analysis.

Globalization has had a positive influence on educational aspirations in developing countries and more parents want their children to pursue an education. But more often than not, in both urban and rural communities, parents lack the resources to send their children to secondary or tertiary schools, which are NOT free. Additionally, education budgets in the developing world are inadequate and are not equitably distributed across and within developing countries like Kenya. The result is that there is a considerable gap between the types of education received in rural areas compared to urban areas (Cockerham & Cockerham, 2010). This is fairly easy to explain. If opportunities for employment and social mobility are *thought* to be better in urban areas then in rural areas, the best opportunities to obtain education will be situated in urban areas. This translates to fewer and lower quality schools located in rural areas, and less incentive for parents to send rural children to school. It also translates into increased urbanization as rural people seek increased opportunities in large cities.

The Urban Advantage

The oft cited "urban advantage" comes into question here. The urban advantage model suggests that students in larger cities perform better and attain higher levels of education than students in rural areas (Mugisha, 2006). Singh and Samara (1996) place great import on this notion of the urban advantage and the increase in urbanization that has occurred across Africa over the last 60 years. The authors' advancement of a trio of socioeconomic development factors that work together to delay marrying age are important to think about at this point. The crux of their argument for the inclusion of urbanization in this trio is based on the idea that living in an urban environment provides some sort of cumulative advantage. Not only does living in an urban area increase educational performance and attainment it also has a social impact on women's ideology. The authors suggest that living in an urban environment increases a woman's exposure

to modern values that favor marriage postponement; it distances women from traditional forms of social control over their sexual behavior, and it also increases a woman's control over partner selection.

However, there is likely no inherent social advantage in moving from a rural area to an urban area if you end up living in one of the 19 urban slums in Nairobi, Kenya's capital (or in any of the thousands of slums to be found in the large cities of the global South). Over 60% of the urban population of Kenya lives in a slum (Mugisha, 2006). Mugisha suggests that the urban advantage is a myth and that it has dwindled in recent years as Kenya has become more urbanized. He adds that in many cases rural children have higher educational attainment than children who live in urban slums.

Children from large slums like Kibera, on the outskirts of Nairobi, are not reaping the benefits of free primary education (Bold et al., 2010; Tooley et al., 2008). The demand for education in urban slums is further depressed by high unemployment rates and lack of educational services. The schooling that *is* available in urban slums is for the most part non-formal schooling, in overcrowded and dangerous conditions in facilities that lack supplies and qualified staff. These factors work together to create a serious *disincentive* for slum children to attend school (Mugisha, 2006). The DARAJA Civic Initiative created in 2006 found that in two of Nairobi's most populous slums, nearly half of all elementary school age children did not attend school at all (DARAJA, 2007).

The reason we need to consider the role of urban advantage (or the false idea of this advantage) and consider the usefulness of the childhood residence variable is because the KDHS data sets used in this study do not make a distinction between slum and non-slum areas. The measure provided only offers four childhood residence categories (capital, city/town, abroad, and

countryside), which in reality constitute spatial categories that do little to shed light on variations across and between residential categories.

This is a serious limitation to this study as it conceals the slum population as they are technically considered urban (and hence thought of as advantaged) capital dwellers. The development literature has consistently relied on what may very well be an archaic urban-rural dichotomy; in doing so sociologists have neglected the interface and interdependence that exists between populations. Migration patterns are especially fluid in Kenya and the dynamics between urban and rural dwellers is often downplayed (Devas, 2004). Lichter and Brown's (2011) findings, while based on research conducted in America, may also be applicable to Kenya. They suggest that it is very problematic to attribute certain sets of behaviors along a static and segregated rural-urban continuum. They posit that traditional boundaries between urban and rural areas have become blurred over the last 20 years thereby diminishing the usefulness of such a fixed variable.

If the urban advantage indeed still exists then I expect to see a significant difference between marrying age for rural and urban women because I am assuming that urban women attain more education and therefore marry later than their rural counterparts. If however, the urban advantage is an outdated assumption in Kenya (which I suspect it is, considering the high urban slum population) then I hypothesize that while childhood residence may be correlated with marrying age, this difference is moderated by educational attainment. Residency is not the only barrier to education; other barriers to education are presented in the next section.

The previous sections in this chapter provide support for the inclusion of education, occupation, and childhood residency in this analysis. The fourth explanatory variable in this study is age at sexual debut. The literature on the topic of sexual debut generally focuses on how

sexual debut is linked or correlated with education, residency, and ultimately fertility rates. The strong links *between* my explanatory variables are the focus of this section.

Sexual debut and its interaction with education and residency

The role sexual debut has in this puzzle is complex, and interactions between sexual debut and two of the independent variables are very important in this analysis. Essentially sexual debut is linked to educational achievement and residency and by interacting with these factors sexual debut ultimately (if indirectly) affects marrying age (Gomes, 1984).

Early sexual debut is associated with truncated schooling and sexual debut is often delayed if one is still in school (Biddlecom et al., 2008). Other studies confirm this link and suggest an association between school enrollment and delayed initiation of sexual activity. This association then leads delays in marriage and to lower fertility rates (McGrath et al., 2009; Jukes et al., 2008; Gomes, 1984). There is a negative relationship between family size and education; women in school have lower overall fertility rates than women not attending school. This means fewer mouths for the Kenyan government to feed and assist. I hypothesize that either directly or indirectly; sexual debut is likely to have an effect on marrying age.

Urban residency is also correlated with early sexual debut (McGrath et al., 2009; Jukes et al., 2008). This may be because pre-marital or early sexual debut is less frowned upon in urban areas than in rural areas where sexual activity may be less socially acceptable. In 2003 nine percent of respondents in this study did not make their sexual debut until their first union (wedding night) while in 2008 that number dropped to five percent. I believe that this decline is occurring more in urban areas than rural areas. I suggest that rural girls who make their sexual debut before marriage are more likely to be "married off" quickly to “save face,” while urban girls who are sexually active before marriage do not face such strong social pressure. I

hypothesize then, that becoming sexually active before marriage has a stronger negative effect on marrying age in rural areas compared to urban areas.

Age, religion, and media exposure

There are three additional considerations in this study: age, religion, and media exposure. While I have no hypotheses in my analysis that directly include these factors they are still important to consider as they may play a role in determining at what age a woman chooses (or is expected) to marry.

In Kenya the "traditional" or standard life course for women includes about six years of education. This means that on average women finish school at age 12. On average they marry at about 17 years old and for the most part have their sexual debut after marriage. Nearly 70% are unemployed. The transitional years from adolescence into early adulthood are under documented but are very important predictors of what type of life course a woman will have.

By limiting the sample of women in this study to those ages 15-22 I can focus on these transitional years and focus on the group of women that may be most affected by Kenya's change in educational policy. Additionally this is the age group that is technically school aged. The Free Primary Education program was implemented in 2003 and therefore the women in the sample in 2003 will not have had much of an opportunity to reap any of the benefits that may stem from the new program. While women in the same age group in the 2008 interviews would have been age 10-17 in 2003 and therefore had exposure to the FPE program over the previous five years. Comparing the effects of education across these two cohorts allows us to gauge the effect of the FPE program.

In Kenya, there are several religions and Kenyans are generally religious. Main denominations in Kenya are Protestant, Catholic, and Muslim. There were very few women who

said they were not religious. Religion may have a strong affect a woman's age at first marriage or entrance into marriage because religious norms and beliefs help to construct one's feelings about marriage and family formation (Ikamari, 2005). These beliefs ultimately influence women's views on marriage timing and appropriate and socially acceptable life course trajectories.

The effect of media exposure on life course trajectories (including marriage) is relatively unknown. However, we may reasonably assume that young Kenyan women who are more exposed to media messages that may include an emphasis on education and/or a "liberal" view on sexual experience may choose different life course patterns than those with less media exposure (Buckholtz et al., 2009). In areas highly influenced and exposed to global culture (i.e. urban areas), postponement of marriage may be encouraged and arranged marriages may be viewed as unfavorable. Women who are not exposed to "modernized" values via the media may stick with what we might call traditional life course patterns (which may include lower emphasis on educational attainment, greater emphasis on marrying young and before sexual debut, or higher rates of arranged marriages) than women with more exposure to media messages (Westernized or otherwise).

The effect of the globalization process, which includes media messages, that rival traditional messages, is difficult to measure. I believe however, that the globalization process is accompanied by the increased availability of media messages. Hence the resulting increase in exposure to new ideas may, at least in part, be responsible for profound changes in life course trajectories in modern societies like Kenya.

The number of exposures a woman has to a given media outlet over the course of a year can be considered a measure of her access to media messages. There is no data available from

the Kenya Demographic Health Survey that breaks down the types and/or content of media women see, hear, or read. This study is therefore limited in that it cannot state that exposure to certain types of media messages are correlated with the timing of marriage. I can only suggest that media exposure may have an effect on marrying age.

CHAPTER FOUR: DATA AND METHODS

Data

Data sets from the Kenya Demographic and Health Survey (KDHS) for 2003 and 2008 are used to discuss patterns of marriage among Kenyan women between the ages of 15 to 22. The KDHS are quantitative nationally representative household sample surveys and are usually conducted at five year intervals. Data collection took place over a three month period for both data sets. Surveys are household-based; samples are drawn from the population residing in households across the country. Over 10,000 households are drawn for each sample. Respondents are selected using 400 sample points (clusters) throughout Kenya using a multi-stage stratified design. Questionnaires are administered in face-to-face interviews on an individual basis. For more information on sampling methods please see www.measuredhs.com. An advantage to using these surveys is that the Demographic and Health Surveys are quite standardized. This means that questionnaires are similar both within and between countries. This lends itself to the creation of comparison studies that seek to identify changes over time.

The data is analyzed in two steps; in the first step, the dependent variable is dichotomous, women are either married or not married by the time of the interview. In the second step the dependent variable is continuous; for those who are married, the dependent variable is their age at marriage. The explanatory variables used in this analysis include educational attainment, occupation, childhood residence, and age at sexual debut. Control variables include age, religion, and media exposure. The final sample size in 2003 is 2,832 and is 2,824 in 2008.

Measures: Dependent variable

The dependent variable used in this analysis is age at first marriage. Women were asked questions in the survey regarding marital status. Women who reported they were married or living with a man as his wife were considered to be married, regardless of the legality of the union. Nearly 35% of women included in this study in 2003 and 36% in 2008 have been married, while 66% and 68%, respectively, have not yet married. This data only includes women ages 15-22 and does not capture marriages that occur after age 22. Essentially this means that this analysis looks at the chances of marrying during the transition from adolescence to young adulthood and then asks, for those who are already married, what factors are correlated with their age at marriage.

The mean age at first marriage for women in this study is 17 years. The distribution continuously decreases after age 20. There is little variation between samples. Of those women who are married roughly 4% of the respondents were married between 10 and 14 years of age, nearly 26% were married between 15 and 20 years of age, and the remaining women were married after age 21. A dichotomous variable was created for use in binary logistic regression. Those who "have not married" are coded 0, and those who "have married" are coded 1. The reference category is "have not married." OLS regression also includes age of marriage as the dependent variable. Only women who have married are included in this analysis and responses range in age from 10-22. Figure 1 provides the distribution for the age of marriage.

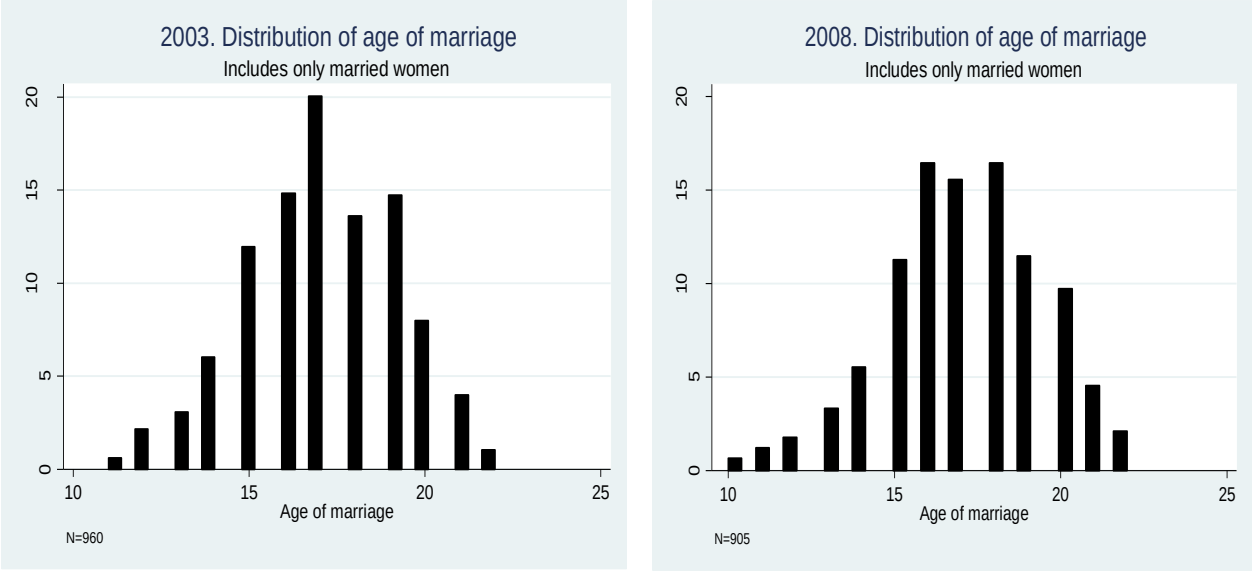

Figure 1. 2003 Distribution of age of Marriage.

Measures: Independent variables

There are four independent variables included in this analysis: education, childhood residency, occupation, and sexual debut. As explained in Chapter 3, the literature strongly supports the inclusion these variables as factors affecting age of marriage. In Kenya early marriage usually signals the end of education just as continued education results in a delay in marriage. Level of education of the woman is reported at the time of the survey. Women were asked "what is the highest level of education you received?" Response categories for educational attainment range from "no education" to "tertiary." In both 2003 and 2008 over 10% of women achieved no education. In 2003 over 38% of respondents achieved incomplete primary education (this drops to 33% in 2008). The number of respondents who completed primary school in 2003 is 23% and in 2008 is 22%. Educational attainment at the secondary level has increased between data sets. Nearly 15% of respondents in 2003 and nearly 18% in 2008 had achieved an

incomplete secondary education. Nearly 11% of respondents in 2003 and 12% in 2008 had a complete secondary education. Very few women in 2003 and 2008 achieved a tertiary education (three and four percent respectively).

Orthogonal categories are created using this education variable. This allows a comparison between educational categories (i.e. between women with no education vs. those with secondary or between women with primary vs. secondary education). Doing this allows comparison between categories without the use of traditional dummy variables and avoids having a single reference category. These orthogonal categories are included in both the logistic and OLS regressions.

The education variable is also recoded into years of education. "No education" receives a value of 0, "incomplete primary" 4, "complete primary" 8, "incomplete secondary" 10, "complete secondary" 12, and "higher" receives a value of 14. This recoded variable for education is used to create an interaction effect between residency and education, which is explained in further detail below.

Childhood residency also plays a role in predicting timing of marriage. The residency variable in this analysis is based on childhood residency as opposed to current residency because primary and secondary schooling will be completed before interviews were conducted. Respondents were asked "For most of the time until you were 12 years old, did you live in Nairobi, Mombasa, in another city or town, or in the country-side?" Response categories are recoded to include "capital," "city/town," "countryside," and "abroad." Dummy variables use countryside as the reference category as over 70% of both samples grew up in the countryside.

Chapter 3 introduces issues of non-compliance to FPE programming and revolves around the perceived mismatch in occupational opportunities for young women. For this reason a

variable to measure occupational status is included here. Respondents were asked "What is your occupation, that is, what kind of work do you mainly do?" Response categories include: not working or have not worked in the last year, professional/technical/manager, clerical, sales, agricultural (self employed), agricultural (employee), household and domestic, services, skilled manual, or unskilled manual. Those who are not employed are recoded as 0 "not working." All women employed in agricultural, household and domestic, or unskilled manual labor are coded as 1, the "informal sector." In 2003 over 28% of women worked in the informal sector and in 2008 this number drops to 15%. All women employed in professional/technical/manager, clerical, sales, services, or skilled manual labor is coded as 2, the "formal sector." In 2003 over 10% of women worked in the formal sector, in 2008 this number jumps to 14%. Dummy variables use "not working" as the reference category since 60% of the respondents in 2003 and 70% of respondents in 2008 were not working.

This study also examines the effects of age at first sexual debut on age and entrance marriage and support for the inclusion of this variable is presented in Chapter 3. Women in this study were asked about their sexual history. Respondents were asked "Have you had sex?" Responses include yes and no. They were also asked "How old were you when you had sexual intercourse for the very first time?" Responses are given in age in years. Nearly 45% of respondents in 2003 and 2008 had not yet had sex. The distribution of age at first intercourse in both samples is roughly bell-shaped with the mean age in both samples being 16 years old. Nearly ten percent of women in 2003 and five percent of women in 2008 report that first intercourse occurred at first union.

A dichotomous variable for sexual debut is created to measure premarital sexual debut. Women who report that their first sexual experience occurred at or after first union are recoded

as not having had premarital sex and coded "0." Women who have not yet had sex are also coded "0." Women who had sex at any time before marriage are coded "1." An interaction effect between sexual debut and residency is used in this analysis and is explained further in the next section.

Measures: Interaction terms

Interaction effects are used to better understand the relationship between two independent variables and how this relationship affects the dependent variable. There are two interaction effects included in this analysis. The first is used to test my third set of hypothesis which state that education has a stronger positive effect on age of marriage in rural areas than in urban areas and that urban women who attain more years of education are less likely to marry than rural women who attain similar education. To create this interaction effect I use the dummy variables created for childhood residence and combine these with the continuous education variable. The reference category is countryside.

The second interaction effect is used to test my fifth set of hypotheses. I hypothesize that becoming sexually active before marriage has a stronger negative effect on marrying age in rural areas compared to urban areas and that urban women who make their sexual debut before marriage are less likely to marry than rural women who make their sexual debut before marriage. To create this interaction effect I use the same childhood residence variable and combine it with the dichotomous sexual debut variable.

Measures: Control variables

This analysis includes three control variables: age, religion, and media exposure. Respondents were asked "What is your current age?" Responses are given in years and this sample includes women ages 15-22. Ages are cross checked using birth month and year.

Though there is no specific hypothesis about religion in this study it is included as a control variable. Respondents were asked "What is your religion?" Response categories include "Roman Catholic," "Protestant/Other Denomination," "Muslim," and "No religion." Over 60% of respondents in both samples are Protestant or Other Denomination, roughly 23% are Catholic, and 15% are Muslim. Less than one percent of women did not claim a religion, because this category is so small these women's responses are coded as missing. Dummy variables were created using "Protestant/Other Denomination" as the reference category.

Respondents were asked how often they read newspapers, listen to the radio, or watch television. Response categories for all three variables are 0 "not at all," 1 "less than once a week," 2 "at least once a week," and 3 "almost every day." An index is created from these three variables and measures media exposure. The index compiles exposure to newspapers, television, and radio. To create the index these variables are recoded to reflect how many days a woman may have been exposed to media during a year. Those who stated they are not exposed at all remain coded as "0", exposed less than once a week is coded as "25," at least once a week is coded "50," and almost every day is coded "180." The three variables are summed and the result is divided by the number of variables in the index (3). Factor analysis ensures the validity of the index. Table 1 provides a detailed frequency distribution of the study population for all explanatory and control variables.

Table 1. Descriptive Statistics of Variables Used in the Analysis of Marital Age of Women

Variables	2003 Proportion (Mean/S.D) Kenya	2008 Proportion (Mean/ S.D.) Kenya
Explanatory Variables		
Education (range 0-14))	(6.51/3.73)	(6.91/3.88)
No education (0)	.11	.11
Incomplete primary (4)	.38	.33
Complete primary (8)	.23	.22
Incomplete secondary (10)	.15	.18
Complete secondary (12)	.10	.12
Tertiary (14)	.03	.04
Occupation		
Not working (reference)	.61	.70
Informal sector	.29	.16
Formal sector	.10	.14
Childhood place of residence		
Capital or large city	.13	.11
City/Town	.11	.14
Abroad	.02	.02
Countryside (reference)	.74	.73
Pre-marital sexual debut		
Never Had (reference)	.53	.51
Had premarital sex	.47	.49
Control Variables		
Age (range 15-22)	(18.46/2.22)	(18.49/2.30)
Religion		
Protestant/Other Denomination (reference)	.60	.60
Roman Catholic	.25	.21
Muslim	.13	.17
Media Exposure (range 1-180)	(62.18/47.91)	(63.94/48.41)

Sources: The Kenya Demographic Health Survey.
Sample size: 2003= 2,825; 2008= 2,824.

Methods

All analyses are estimated using SPSS and STATA. Descriptive statistics and two separate regression analyses are performed. Binary logistic regression is performed to estimate significant differences in the factors as they affect married and unmarried young women. OLS regression is used to estimate significant differences between ever-married women.

Regression diagnostics and bivariate analyses are performed on the regression model using the dichotomous dependent variables. In both 2003 and 2008 data the dependent variable (married or not married) has close to normal skewness (.67, .78) and kurtosis (1.44, 1.61). Diagnostics on both samples suggest that model form assumptions are met. Tests were performed on the dependent variable for normality, multicollinearity, heteroscedasticity,

residuals, leverage, and outliers. The population and variables have acceptable multicollinearity issues and a few outliers. Leverage is not a concern.

Results from binary logistic regression are presented in Table 2. I use nested models to compare how the explanatory factors affect married and unmarried women differently. I first introduce the control variables (model A), then introduce the predictor variables in models B. Education is introduced in Model C as orthogonal categories. Model D includes a continuous measure of years of education. Model E includes control, all independent variables, and interaction effects. I use nested modeling so that I am confident that changes in model fit are the result of introducing new variables. Findings are reported as odds ratios.

Results from OLS regression are presented in Table 4. Nested models are identical to those used in the binary logistic regression but labeled Models 1-6. They estimate the effect of the explanatory factors on age of marriage for the ever-married women in the data sets. Findings are reported as unstandardized coefficients.

CHAPTER FIVE: FINDINGS AND DISCUSSION

Bivariate Analysis

The dependent variable in this study is marriage. Final sample size using list-wise deletion is 2,825 in 2003 and 2,824 in 2008. Bivariate analysis was performed between the dependent variable and all explanatory and control variables. Analysis includes chi-square tests of association and independent samples t-test.

T-tests are performed to determine whether there is a significant difference between marital status and the average values of age, media exposure, and education. T-tests suggest there is a significant relationship between age and marital status. In both 2003 and 2008 women in the sample who are not married are, on average, significantly younger than women in the sample who are married (t=-26.52 and -30.09 respectively; p<.001).

Additionally, there is a significant relationship between average media exposure and marital status. In both 2003 and 2008 women who are not married have higher average media exposure than women who are married (t=8.16 and 10.23; p<.001). There is also a significant relationship between education and marital status. In both 2003 and 2008 women who are not married have higher average number of years of education than women who are married (t=11.91 and 12.78; p<.001).

Chi-square tests of association are performed to determine whether there is a significant relationship between marital status and religion, residency, occupation, and sexual debut. In 2003 there is a significant association between marital status and religion ($\chi^2 = 40.60$; $p < .001$). Cramer's V indicates that this association is moderate (.12). In 2008 the same association is seen ($\chi^2 = 44.80$; $p < .001$; Cramer's V= .13).

There is no significant relationship between marital status and residence in either 2003 or 2008. This suggests that there is no significant difference in marital status according to residency categories. Women from the countryside are just as likely to be married as women from the city.

In 2003 there is a significant association between marital status and occupation (χ^2 = 98.54; p <.001). Cramer's V indicates that this association is moderate (.19). In 2008 a similar association is seen (χ^2 = 145.93; p <.001; Cramer's V= .23). In both samples over 75% of those not working are also not married.

In 2003 there is also a significant association between marital status and sexual debut (χ^2 = 423.64; p <.001). Cramer's V indicates that this association is strong (.39). In 2008 a similar association is seen (χ^2 = 327.13; p <.001; Cramer's V= .47). This association is strong since in both samples over 80% of those who have made their sexual debut are also married.

Binary Logistic Regression Model

Binary logistic regression models are used to estimate the effects of control, independent, and interaction variables. Table 2 presents the odds ratios for all effects. Model A includes only the control variables. Model B incorporates the independent variables with the exception of education. Education is added independently in Models C and D. The final model, Model E, includes both sets of interaction effects. In order to formally test the differences between the data sets the data is pooled and interaction effects between year of survey and religion, education, residency, occupation, and sexual debut are estimated. The differences in the effects between 2003 and 2008 are not significant for any of these variables. However, the results of the pooled data suggest that, overall; there *is* a significant difference between odds of marrying before age 22 in 2008 and 2003. In 2008 the odds of marriage are 23% lower than in 2003 (p<.001). See Table 3 for results of binary logistic regression using pooled data.

Model A: Control variables

Model A includes the control variables that may have an effect on the dependent variable. They include age, religion, and media exposure (2003: LR χ^2 = 795.34; p<.001, 2008: LR χ^2=1,002.28; p<.001). The results suggest that there is no significant difference in odds of marrying by age 22 between Protestants and Catholic. Muslims however, have 96% higher odds of marrying by age 22 than Protestants in 2003. This figure decreases to 81% higher odds in 2008 (p<.001). These results suggest that, for Muslim women, religion has a significant affect on a woman's odds of marrying by age 22. Religious norms and beliefs associated with the Muslim faith ultimately influence women's views on marriage as well as the appropriate and socially acceptable life course trajectories.

In this model media exposure has a significant negative effect on odds of marrying by age 22 in both samples. For every one unit increase in media exposure (range: 0-180) the odds of marriage decrease by one percent (p<.001). In other words, women who watch, read, or listen to more media sources have lower odds of marrying by age 22. Research on the effect of media on the life course is limited, but I suggest that women who are exposed to fewer "modernized" values via the media may be more inclined to stick with what we might call traditional life course patterns (which may include lower emphasis on educational attainment, greater emphasis on marrying young and before sexual debut) than women exposed to more media messages.

Model B: Residence, occupation, and sexual debut

Model B includes the control variables and introduces childhood residence to test hypotheses 2, 3, and 5. Occupation is introduced to test hypothesis 4 and sexual debut to test hypothesis 5 (2003: LR χ^2 = 1,035.64; p<.001, 2008: LR χ^2 = 1,398.40; p<.001). The change in

chi-square between the models is significant ($p<.001$). The effects of the control variables remain unchanged with the exception of Catholics in 2003. When residence, occupation, and sexual debut are controlled for there is a significant difference in the odds of marrying by age 22 for Catholics compared to Protestants. In 2003 Catholics have 23% lower odds of marriage than Protestants ($p<.05$). Additionally, when these variables are controlled, Muslim women have much higher odds of marrying by age 22 than Protestants (272% and 308% in 2003 and 2008; $p<.001$).

Despite what much of the existing literature suggests there is no significant difference between odds of marrying by age 22 and childhood residence. Women who grew up in the capital, the cities/towns, or abroad do not have significantly different odds of marrying during the transition from adolescence to young adulthood compared to women who grew up in the countryside.

While the results do not support my residence related hypotheses I believe that they support the criticism I present in Chapter 3 that states the urban advantage is a myth. When controlling for other variables in the model, living in an urban area does *not* constitute a cumulative advantage since women do not have significantly different odds of marrying by age 22 in rural areas than they do in urban areas. In other words residency alone does not significantly impact odds of marrying young. This lack of significance may be due to a number of problems attached to urban living that urban advantage proponent's neglect, including increased poverty in the urban slums of Nairobi which are home to over 60% of its urban population. It may also be attributed to the outdated use of urban-rural variables that neglect the fluidity of migration patterns.

The effect of occupation in this model is mixed. The results do not provide support for hypothesis 4. In both samples there is no significant difference in odds of marrying by age 22 for women working in the informal labor sector compared to women who are not working. However, there *are* significant differences between women who work in the formal labor sector and women who do not work. In 2003 women who work in the formal sector have 36% higher odds of marrying by age 22 than women who are not in the labor force ($p<.05$). In 2008 the odds increase to 70% ($p<.001$).

Singh and Samura's (1996) suggest that labor force participation is a cumulative advantage that is positively associated with delayed marriage. The results suggest that this is not true for women in the labor sector. Those very few women (less than 14%) who hold a place in the formal labor sector actually experience significantly higher odds of marrying by age 22 than women who are not working. Though much of the literature suggests otherwise, women who work do *not* have lower odds of marrying during the transition from adolescence to young adulthood than women who do not work.

Pre-marital sexual debut has a significant effect on the odds of marriage. In 2003 women who had pre-marital sexual debut have 384% higher odds of marrying by age 22 than women who have not had pre-marital sex ($p<.001$). In 2008 the odds are 986% higher. In this type of situation these incredibly high odds are indicative of the fact that in these samples most of the women who have had sex are also married. There are very few women who made their sexual debut and have not married. Hence the effect of sexual debut may be more meaningful in the OLS regression as it represents the effect of pre-marital sexual debut on *age of marriage* rather than the effect of sexual debut on married vs. non-married women.

Model C: Education

Model C introduces orthogonal categories of education, which is my main effect, to test hypothesis 1 (2003: LR χ^2 = 1,162.65; p<.001, 2008: LR χ^2 = 1,531.76; p<.001). The effects of age, media exposure, occupation (in the formal sector), and sexual debut remain significant. When education is added to the model using orthogonal categories there is a significant difference between categories. The results suggest that the higher the level of educational attainment the lower the odds of marrying by age 22.

There is a significant difference in odds of marrying by age 22 between women do not attain an education and those who complete primary school. Roughly 11% of women in each sample report having absolutely no education. In 2003 women who attain a complete primary education have 84% lower odds of marrying young than women who attain no education (p<.001). In 2008 the odds are 82% lower (p<.001). There is also a significant difference in odds of marriage between women who have tertiary schooling and those who have completed primary school. In 2003 women who attain tertiary education (13 years or more) have 63% lower odds of marrying by age 22 than women who complete primary school (p<.001). In 2008 the odds of marrying for the same group is 70% lower (p<.001). In 2003 women who complete secondary school have 59% lower odds of marrying during the transition from adolescence into adulthood than women who only complete primary school (p<.001). In 2008 the odds are 61% lower (p<.001).

These findings support hypothesis 1. Primary schooling is a building block for gaining access to secondary and tertiary schooling. Education has the potential to reduce the chance of marrying during adolescence, giving women more time to further their education or take advantage of other opportunities that may be limited by marriage.

Model D:

Education is introduced as a continuous education variable measured in years in Model D. (2003: LR χ^2= 1248.44; p<.001, 2008: LR χ^2 = 1557.91; p<.001). The results suggest that the more education you achieve the lower your odds of marrying by age 22. This supports hypothesis 1 which states that education has a significant positive effect on marriage. In 2003 every one year increase in education decreases the odds of marriage 22% (p<.001). In 2008 the effect of education is still significant but slightly diminished; the odds of marrying by age 22 decrease to 20% (p<.001).

The decline in the positive effect of education on the odds of marrying during the transition from adolescence to young adulthood between 2003 and 2008 may be due to a variety of reasons. Chapter 3 posits issues associated with FPE that may explain this change including educational outcomes, over-crowding, and limited funding. All of these factors might influence the way women experience primary education. Ultimately, the results suggest that while increases in education decrease the odds of marriage, the real and tangible impact of education may be dwindling.

Model E: Interactions

Model E introduces interaction effects to test hypotheses 3 and 5 (2003: LR χ^2 = 1,258.02; p<.001, 2008: LR χ^2 = 1,581.19; p<.001). The interaction effects are not significant in either sample and the results do not support the hypotheses. The effects of education on and sexual debut on age of marriage are not greater given certain types of childhood residency. This finding is not surprising given the results of Model B which suggest there is no significant association between residency and marriage.

Table 2. Odds Ratios from Binary Logistic Regression of Socioeconomic Development Factors on Marriage (all women included).

	Odds ratios for marrying by age 22									
	Model A		Model B		Model C		Model D		Model E	
VARIABLES	**2003**	**2008**	**2003**	**2008**	**2003**	**2008**	**2003**	**2008**	**2003**	**2008**
CONTROLS										
Age (15-22)	1.76***	1.93***	1.61***	1.72***	1.66***	1.77***	1.79***	1.85***	1.79***	1.85***
Religion[a]										
Roman Catholic	.84	.81	.77*	.84	.76*	.81	.75*	.81	.76*	.82
Muslim	1.96***	1.81***	3.72***	4.08***	1.46*	2.36***	1.55*	2.18***	1.67**	2.19***
MediaExposure	.99***	.99***	.99***	.99***	.99***	.99***	.99***	.99***	.99***	.99***
MAIN EFFECTS										
Childhood residence[b]										
Capital or large city			.99	1.01	1.20	1.17	1.27	1.19	1.63	1.18
City/town			1.05	.97	1.08	1.08	1.10	1.08	.63	1.30
Abroad			1.06	1.16	.99	.96	.88	.83	.60	.58
Occupation[c]										
Informal sector			1.19	1.21	1.07	1.09	.97	1.07	.97	1.06
Formal sector			1.36*	1.70***	1.50*	1.64***	1.54**	1.70***	1.50*	1.69***
Pre-marital Sexual debut[d]			4.84***	10.86***	5.53***	12.92***	5.19***	11.98***	4.64***	11.45***
Education										
No educ. vs. primary					.16***	.18***				
Primary vs. tertiary					.37***	.30***				
Primary vs. secondary					.41***	.39***				
Years of education							.78***	.80***	.78***	.81***
INTERACTIONS										
Education X Capital									.95	.94
Education X Capital									1.03	.98
Education X Capital									.89	1.07
Premarital X Capital									1.29	1.83
Premarital City/town									1.72	.95
Premarital X Abroad									6.20	1.09
LR Chi-Square	795.34***	1002.28***	1035.64***	1398.40***	1162.65***	1531.76***	1239.11***	1555.07***	1248.44***	1557.91***
χ^2 change	-	-	240.30***	396.12***	127.01***	133.36***	-76.46***	-23.31	9.33	2.85
df	4		10		13		11		17	

Notes: Significance levels *** p<0.001, ** p<0.01, * p<0.05. Source: KDHS 2003 and 2008.
Reference categories: [+] Not married; [a] Protestant [b] Countryside [c] Not working [d] Not had pre-marital sex.
Source: Kenya Demographic Health Survey. N= 2,825 in 2003; N= 2,824 in 2008.

Table 3. Odds Ratios from Binary Logistic Regression to formally test significance between factors and year of survey (pooled data).

	Odds ratios for marrying by age 22				
VARIABLES	**Year of Interview**	**Religion X year**	**Occupation X year**	**Education X year**	**Sexual debut X year**
CONTROLS					
Age (15-22)	1.81***	1.81***	1.81***	1.81***	1.81***
Religion[a]					
Roman Catholic	.77**	.77**	.77*	.77	.79**
Muslim	1.80***	1.80***	1.80***	1.81***	1.85***
MediaExposure	.99***	.99***	.99***	.99***	.99***
MAIN EFFECTS					
Childhood residence[b]					
Capital or large city	1.22	1.22	1.22	1.22	1.22
City/town	1.07	1.08	1.08	1.07	1.08
Abroad	.87	.87	.87	.88	.86
Occupation[c]					
Informal sector	.99	.99	.92	.99	1.02
Formal sector	1.62***	1.61***	1.50*	1.62***	1.61***
Pre-marital Sexual debut[d]	7.26***	7.29***	7.29***	7.28***	5.42***
Years of Education	.79***	.79***	.79	.78***	.79***
2008 Survey	.77***	.77**	.72***	.68**	.48***
INTERACTIONS					
Catholic X 2008		1.19			
Muslim X 2008		.93			
Informal work X 2008			1.20		
Formal work X 2008			1.15		
Education X 2008				1.02	
Sexual debut X 2008					2.01
LR Chi-Square	2770.30***	2770.92***	2771.45***	2771.42***	2787.70***
df	12	14	14	13	13

Notes: Significance levels *** p<0.001, ** p<0.01, * p<0.05.
Reference categories: [+] Not married; [a] Protestant [b] Countryside [c] Not working [d] Not had pre-marital sex.
Source: Kenya Demographic Health Survey 2003 and 2008; N= 5,649.

OLS Regression

Nested OLS regression models include the same independent variables used in the binary logistic regression. The dependent variable in this regression is age of marriage in years (range= 10-22). Models 1-5 are presented in Table 4. These models estimate the effect of the explanatory variables on age of marriage for the ever-married women in the 2003 and 2008 data sets. Findings are reported as unstandardized coefficients. In order to formally test the differences between the data sets the data is pooled and interaction effects between year of survey and religion, education, residency, occupation, and sexual debut are estimated. The differences between 2003 and 2008 are *not* significant for any of these variables. However, the results of the pooled data suggest that, overall, there *is* a significant difference in the age of marriage between 2008 and 2003. In 2008 the age of marriage is .22 years *younger* in 2008 than in 2003 ($p<.05$). See Table 5 for results of OLS regression using pooled data.

Model 1: Control variables

Model 1 includes the control variables that may have an effect on the dependent variable. They include age, religion, and media exposure. This model explains 24% of the variation in the dependent variable in 2003 ($F= 76.20$; $p<.001$) and 19% of the variation in 2008 ($F=53.37$; $p<.001$). In this model age has a significant positive effect on age of marriage in both samples. A one year increase in age increases age of marriage by .54 years in 2003 and by .43 years in 2008 ($p<.001$).

In this model the effect of religion is mixed; there is no significant difference in age of marriage between Catholics and Protestants, but there is a significant difference between Muslims and Protestants. Muslims marry earlier than Protestants. Being Muslim decreases age of

marriage by .48 years in 2003 ($p<.01$) and .70 years in 2008 ($p<.001$) compared to being Protestant.

Media exposure also has a significant positive effect on age of marriage in both samples, though the effect is quite small. In both 2003 and 2008 a ten unit increase in media exposure (range= 0-180) increases age of marriage by .10 years ($p<.001$). These results are similar to those seen in logistic regression; women who watch, read, or listen to more media sources marry later.

Model 2: Residence, occupation, and sexual debut

Model 2 includes the control variables and introduces childhood residence to test hypotheses 2, 3, and 5. Occupation is introduced to test hypothesis 4 and sexual debut to test hypothesis 5. This model explains more of the variation in the dependent variable in 2003 (R_2= 26%; F= 32.66; $p<.001$) and in 2008 (R_2= 21%; F=24.18; $p<.001$). The effects of the control variables remain unchanged with the exception of Muslims in 2003. When residence, occupation, and sexual debut are controlled for there is no longer any significant difference in age of marriage for Muslims compared to Protestants.

As seen in the logistic regression model there is no significant difference between age of marriage and childhood residence. Women who grew up in the capital, the cities/towns, or abroad do not marry at significantly different ages compared to women who grew up in the countryside.

The effects of occupation in this model are similar to those seen in binary logistic regression; effects are mixed and variable across samples. In 2003 women who work in either the formal or informal labor sector do not marry at significantly different ages than women who do not work. In 2008 the results are the same for women in the formal sector; however age of marriage is significantly different between women who work in the informal sector and those

that do not work. Women who work in the informal sector marry .47 years younger than women who do not work ($p<.01$).

Based on the two regression models (Model B and Model 2) we can conclude that in 2008 working in the informal sector may not significantly affect the *odds* of marrying but does negatively affect the *age* of marriage. We can also conclude that in 2003 and 2008 working in the formal sector may significantly increase the odds of marriage but does not significantly affect the age of marriage.

Sexual debut has a significant positive effect on age of marriage in both 2003 and 2008. The results do not support hypothesis 5, and in fact they suggest the opposite. Sexual debut is in fact positively associated with age of marriage. In 2003 women who have made their pre-marital sexual debut marry .62 years later than women who did not have pre-marital sex ($p<.001$). In 2008 pre-marital sexual debut increases marrying age .83 years for the same group ($p<.001$).

Model 3: Levels of education

Model 3 introduces orthogonal categories of education to test hypothesis 1. This model increases R_2 and explains 33% of the variation in the dependent variable in 2003 ($F= 35.48$; $p<.001$) and 25% of the variation in 2008 ($F=25.71$; $p<.001$). The effects of age and sexual debut remain significant, though the significance of sexual debut is reduced ($p<.05$). Residency still remains insignificant. Additionally, there remains no significant difference in marrying age between Catholics and Protestants.

In both samples when controlling for education the effect of being Muslim compared to Protestant has changed. In 2003 Muslims marry .43 years later than Protestants ($p<.05$) and in 2008 Muslims no longer marry at significantly different ages than Protestants. This may indicate that there is an interaction effect between education and religion. In other words education may

have a stronger positive effect on age of marriage for Muslims than for Protestants. Future analysis should consider this possibility.

The effect of working in the informal sector remains insignificant in 2003 and significant in 2008. However, when education is controlled there is a significant difference in age of marriage in both 2003 and 2008 between women in the formal labor sector and women who are not working. Women who work in the formal sector marry significantly younger (.35 and .37 years, respectively) than women who do not work ($p<.05$).

There is a significant difference in marrying age between educational categories. Education generally has a positive effect on age of marriage. There is a significant difference in age of marriage between women who have no education and those who complete primary school. Compared to having no education completing primary school increases a woman's age of marriage by 1.27 years in 2003 and by 1.20 years in 2008 ($p<.001$).

In 2003 women who attain tertiary education actually marry .82 years *younger* than women who complete primary school ($p<.01$). This directly contradicts hypothesis 1, however, this effect is not seen in 2008. In 2008 there is no significant difference in age of marriage between women who complete primary school and women who attend tertiary school.

Women who complete secondary school marry later than women who only complete primary school. In 2003 women who complete secondary schooling marry 1.70 years later than women who complete primary school ($p<.01$). In other words marriage is delayed nearly two years for women who continue on to secondary school compared to women who only complete primary. In 2008 this difference is still significant though diminished; women who complete secondary school marry .77 years later than women who complete primary school.

Model 4: Years of education

Model 4 introduces the continuous education variable measured in years to test hypothesis 1. This model increases R_2 and explains 35% of the variation in the dependent variable in 2003 (F= 45.92; p<.001) and 29% of the variation in 2008 (F=32.68; p<.001). The effect of all other variables remains consistent between Models 3 and 4.

The results suggest that there is a positive association between education and marrying age. This supports hypothesis 1. In 2003 every one year increase in education increases age of marriage .25 years in 2003 and .23 years in 2008 (p<.001). Based on results from the two regression models (Model D and Model 4) we can conclude that education is negatively associated with the *odds* of marriage and education is also positively associated with *age* of marriage. Women who attain more education are less likely to marry and those who do get married marry at a later age.

Model 5: Interactions

Model 5 introduces interaction effects to test hypothesis 3 and 5 (2003: F= 30.33; p<.001, 2008: F= 21.70; p<.001). The models are significant but no not explain any additional variation in the dependent variable than Model 4. The interaction effects are not significant in either sample and the results do not support the hypotheses. The effects of education on and sexual debut on age of marriage are not greater given certain types of childhood residency.

Table 4. Unstandardized Coefficients from nested OLS Regression of Socioeconomic Development Factors on Age of Marriage in 2003 and 2008 (only ever-married women included).

	Age of Marriage Unstandardized Coefficients									
	Model 1		Model 2		Model 3		Model 4		Model 5	
VARIABLES	**2003**	**2008**	**2003**	**2008**	**2003**	**2008**	**2003**	**2008**	**2003**	**2008**
CONTROLS										
Age (15-22)	.54***	.43***	.54***	.45***	.49***	.43***	.46***	.41***	.46***	.40***
Religion[a]										
Roman Catholic	.11	.05	.10	.05	.13	.03	.09	.04	.09	.03
Muslim	-.48**	-.70***	-.23	-.53**	.43*	-.13	.43*	-.03	.50**	-.05
MediaExposure	.01***	.01***	.01***	.01***	.01***	.01***	.01***	.01***	.01***	.01***
MAIN EFFECTS										
Childhood residence[b]										
Capital or large city			.07	-.06	.05	-.09	-.31	-.19	-.05	-.81
City/town			.07	-.01	..02	-.02	.03	-.03	-.32	.90
Abroad			-.09	-.78	-.06	-.72	.10	-.53	.76	-1.70
Occupation[c]										
Informal sector			-.14	-.47**	-.06	-.55**	-.04	-.51**	-.05	-.51**
Formal sector			-.32	-.30	-.35*	-.37*	-.42*	-.36*	.-.42*	- .35*
Pre-marital Sexual debut[d]			.62***	.83***	.39*	.52*	.38*	.53**	.28	.55*
Education										
No educ. vs. primary					1.27***	1.20***				
Primary vs. tertiary					-.82**	.21				
Primary vs. secondary					1.70***	.77***				
Years of education							.24***	.22***	.25***	.23***
INTERACTIONS										
Education X Capital									-.06	.05
Education X Capital									-.08	-.10
Education X Capital									.05	.07
Premarital X Capital									.17	.35
Premarital X City/town									1.04	-.41
Premarital X Abroad									-1.22	1.05
Constant	5.97***	7.96***	5.70***	7.10***	7.01***	8.04***	6.44***	7.37***	6.50***	7.31***
R-squared	.24	.19	.26	.21	.33	.25	.35	29	.35	. 29
F-statistic	76.20***	53.37	32.66***	24.18***	35.48***	22.76***	45.92***	32.68***	30.33***	21.70
Df	4		10		14		11		17	

Range of age of marriage is 11-22 in 2003 and 10-22 in 2008.
Notes: Significance levels *** p<0.001, ** p<0.01, * p<0.05.
Reference categories: [a] Protestant [b] Countryside [c] Not working [d] Not had pre-marital sex.
Source: Kenya Demographic Health Survey. N=965 in 2003; N=900 in 2008.

Table 5. Unstandardized Coefficients from nested OLS Regression of Socioeconomic Development Factors on Age of Marriage to formally test significance between factors and year of survey (pooled data).

	Age of Marriage Unstandardized Coefficients				
VARIABLES	**Year of Interview**	**Religion X year**	**Occupation X year**	**Education X year**	**Sexual debut X year**
CONTROLS					
Age (15-22)	.44***	.44***	.44***	.44***	.44***
Religion[a]					
Roman Catholic	.06	.09	.06	.06	.06
Muslim	.17	.41*	.17	.17	.17
MediaExposure	.001***	.001***	.001***	.001***	.001***
MAIN EFFECTS					
Childhood residence[b]					
Capital or large city	-.22	-.22	-.22	-.21	-.22
City/town	.01	.02	-.01	.01	.01
Abroad	-.17	-.18	-.17	-.17	-.17
Occupation[c]					
Informal sector	-.24*	-.23*	-.10	-.25*	-.23*
Formal sector	-.36**	-.36**	-.46*	-.34***	-.37**
Pre-marital Sexual debut[d]	.45***	.47***	.43***	.45***	.33*
Years of Education	.22***	.22***	.23***	.21***	.22***
2008 Survey	-.22*	-.13	-.15	-.35*	-.46*
INTERACTIONS					
Catholic X 2008		-.05			
Muslim X 2008		-.42			
Informal work 2008			-.38		
Formal work X 2008			.15		
Education X 2008				.02	
Sexual debut X 2008					.30
Constant	6.97***	6.91***	6.93***	7.01***	7.02***
R-squared	.31	.32	.32	.31	.31
F-statistic	69.41***	59.78***	59.90***	64.14***	64.24***
df	12	14	14	13	13

Notes: Significance levels *** p<0.001, ** p<0.01, * p<0.05.
Reference categories: [+] Not married; [a] Protestant [b] Countryside [c] Not working [d] Not had pre-marital sex.
Source: Kenya Demographic Health Survey 2003 and 2008; N= 1,865.

CHAPTER SIX: CONCLUSIONS

Life course theory suggests the trajectory of one's life course is in large part determined by the opportunities (i.e. advantages/disadvantages) one has throughout their lives (Wu, 2003). Singh and Samura's (1996) view on socioeconomic development discussed earlier in this research suggests that the main explanatory factors included in this analysis should be thought of as cumulative advantages or disadvantages. Accepting this approach implies that those who attain an education, live in an urban area, and participate in the labor force may be advantaged and that these advantages have a significant effect on the age young women decide to get married. This also means that the *absence* of these same opportunities in one's life creates a set of disadvantages and also impacts (negatively) one's age of marriage.

This dissertation examines the effect of socioeconomic developments on life course transitions (in this case the transition into and age of marriage). It is the relationship between education, childhood place of residency, occupation and marriage that is of fundamental importance in this study. Certain factors significantly affect entrance into marriage as well as the timing of marriage; however the effects of these factors have not significantly changed since the implementation of Kenya's Free Primary Education program in 2003. This may be due to many different reasons. The Free Primary Education program has only been implemented for five years and any effect of the program on the life course may take longer than five years to appear. Additionally, the economic situation in Kenya has declined between samples and unemployment has reached record highs.

Education is not the panacea we think it is

My primary research question focuses on education and asks: is the accumulation of education a significant predictor of life course patterns; specifically have the odds or the age of marriage changed since the introduction of free primary education. School enrollment is an impediment to early marriage because in Kenya marriage often marks the point where women's educational opportunities are foreclosed (Sawamura & Sifuna, 2008). FPE is intended to increase school enrollment which should then lead to increased delays in marriage.

This study examines the changing effect of education over time on the timing of marriage by comparing data from 2003 (before FPE was implemented) and data from 2008 (a full five years post-FPE). The results partially support hypothesis 1.1 and 1.2; education is negatively associated with the odds of marriage *and* education is also positively associated with age of marriage. Women who attain more education are less likely to marry and those who do marry get married at a later age. However, the results do not support hypotheses 1.3 or 1.4; the effect of education is not significantly different in 2008 compared to 2003. In other words the effect of education has not significantly changed since the implementation of the FPE program.

The FPE program was implemented after much pressure was exerted on Kenya from the west to encourage it to comply with the Millennium Development Goals. The international/ global community wanted the Kenyan government to expand its population's access to primary education. I suggest that side effects of this policy include the delay of marriage and by association a decrease in fertility; both of which may be desired by the Kenyan government. Research suggests that there is indeed a negative relationship between family size and education; women in school have lower overall fertility rates than women not attending school and so

increasing education would seem a worthwhile endeavor from the government's point of view (McGrath et al., 2009; Jukes et al., 2008; Gomes, 1984).

It is true that because of FPE more children can achieve a primary education and that education has a negative effect on entry and a positive effect on age of marriage. International donors see increased school enrollment as a promising sign of development and because of this they are more willing to providing financial support to the Kenyan government. Donors see increased enrollment as proof that the government is striving to increase "educational equity" (Omwami & Omwami, 2010). Increased enrollment while positive, does not translate into big real world changes for women. The average number of years of education between samples has increased only slightly over five years; from 6.51 years in 2003 to 6.91 years in 2008.

While FPE is in general an improvement and Millennium Development Goal 2 a worthwhile one, there is still much to be critical of. On paper, enrollment has markedly increased across the country. Policies like FPE are created by international agencies with the aim of increasing educational opportunities in Kenya. However, these well intentioned policies have, in many ways, resulted in negative effects on the education system in Kenya. Sawamura and Sifuna (2008) suggest that Kenya has focused only on the *quantitative* expansion of education, and while having more children in school is good, the growth in attendance has occurred at the expense of educational quality. In other words, while there are more children getting an education those children are getting a lower-quality education.

Additionally, the sheer increase in the number of enrolled students has resulted in overcrowded classrooms with as many as 60 students per class (Shimada, 2010). The author suggests that schools lack standardization in class size, resources, and facilities. There are still many problems regarding the quality of FPE schooling that the state must address.

The results of this dissertation suggest that the real and tangible effects of education on marriage, while positive, are limited. Every additional year of education increases the age of marriage by about three months. The greatest effect seems to be between women who complete secondary school and those who only complete primary school. Secondary school is the one level of education that has a real world effect on marriage. Women who finish secondary education marry nearly two years later than women who only finish primary school.

This is not to belittle the fact that achieving a primary education is most definitely a strong and important step towards improving socioeconomic development, reducing poverty, and delaying the transition into marriage. However, in and of itself, the FPE program does not create a situation where young women have the appropriate skills to enter and be productive in a global economy. The focus of the MDG's has long been on primary school, but it may be secondary school that really has the potential to change the life course.

Does where you grew up matter?

The role of urbanization is also important in this analysis. Living in a rural area has a negative effect on entrance into marriage and on marrying age compared to living in an urban area. This assumption is widely supported in the literature however my results suggest that residency has no significant effect on the entrance into or age of marriage for young adolescent women. I also hypothesize that women in the countryside are more likely to follow a more traditional life course pattern that frowns upon early or premarital sexual debut than their counterparts who grew up in the capital or large city. The results do not support this hypothesis. The interaction effect between residency and sexual debut was not significant; becoming sexually active before marriage does not have a stronger negative effect on entrance into or age of marriage in rural areas compared to urban areas.

These findings support my suggestion that urbanization is not the cumulative advantage Singh and Samura (1996) suggest it is. The use of an urban-rural dichotomy is antiquated and the concept of urban advantage is a myth. The KDHS data sets used in this study do not make a distinction between slum and non-slum areas. The measure provides only four childhood residence categories (capital, city/town, abroad, and countryside), which do little to shed light on variations across and between residential categories. This is a serious limitation to this study as it conceals the slum population as they are technically considered urban (and hence thought of as advantaged) capital dwellers. The development literature has consistently relied on an archaic urban-rural dichotomy. Doing so neglects the important interface and interdependence that exists between populations. Migration patterns are especially fluid in Kenya and the dynamics between urban and rural dwellers are often downplayed (Devas, 2004). There is a serious need to create data sets that better reflect and delineate slum populations and direct our attention to the effects urban poverty has on the life course.

How does work affect marriage?

Employment opportunities for women in Kenya are limited and have become increasingly so since 2003. The results of this analysis do not support my hypothesis that women who are unemployed will marry younger than employed women. The findings suggest that not all types of work have the same effect on marriage for adolescents transitioning into young adulthood. There is no significant difference between the *odds* of marriage for those working in the informal sector compared to those not working. But there is a significant negative effect on *age* of marriage between informal workers and non-workers. We can also conclude that in 2003 and 2008 working in the formal sector significantly increases the *odds* of marriage but does not significantly affect the *age* of marriage. These findings directly challenge Singh and Samura's

(1996) belief that labor force participation in general, is an advantage that has a positive effect on marrying age.

The reason for this variation between labor sectors remains unclear but may in part be due to very high rates of unemployment in these samples. Having a job may ultimately not be as important as having a husband; the security Kenyan women gain from marriage may supersede the advantages associated with having a job. Additionally, it may be that women who have jobs experience higher levels of economic independence than their unemployed counterparts and feel more prepared to enter marriage (Oppenheimer, 1998).

The Kenyan government seemingly recognizes that education is linked not only to employment, but it is also considered an investment in an individual's social capital. Kenya struggles to improve its education system, but its economic development is still out of sync with its educational programs. Kenya is at a crossroads; in 2008 unemployment of women in this sample is reported to be 70%. The government must consider whether increasing educational attainment is practical or desirable if there are no jobs available that require more than an average education.

Psacharopoulous (1994) suggests that economic returns from education in Africa are higher than in other regions. However, these returns mean little when there is such a significant mismatch between education and employment opportunities. Yes, you can develop human potential by increasing education, but you will still not experience an increase in economic productivity if employment opportunities for a highly-skilled, highly-educated work force do not exist (Omwami & Omwami, 2010). In other words, education does not provide economic returns when there is a serious discrepancy between educational attainment and demand for educated labor.

Final Thoughts

I began this project imagining that the introduction of the Free Primary Education program in Kenya would yield great changes to the life course trajectory of many women. I was hopeful that young Kenyan women given expanded opportunity to improve their educations would begin to put off marriage at least beyond the average age of 17. This is not the case. While education does, overall, have a negative effect on the odds of marriage and a significant positive effect on marrying age, the average age of marriage between the samples has actually *decreased*.

While ensuring access to primary education is a positive step the FPE program does not increase access to secondary or tertiary education, both of which are prohibitively expensive and difficult to enter. Kenya has a long history, both under colonial rule and after independence, of wielding and limiting education as a means of controlling information thus ensuring social stratification continues. Some researchers suggest that educational inequalities are more important than income inequalities (Goesling & Baker, 2008; Sen, 1999). Of course inequalities in income still exist and still negatively impact millions of lives, but the axis of control in the contemporary globalized world is based on control over education. In other words, there is a monopoly on access to higher education. In 2008 only 22% of women completed primary school- hardly a FPE success story. Only 12% of women completed secondary school and a mere four percent attained a tertiary education.

The trajectory of one's life course is in large part determined by the opportunities, or lack of opportunities, that one has. Primary education is no cure all in a country with an unemployment rate of 70% and a growing urban slum population. Increasing access to low quality, poorly funded primary education does little to change the life course of young Kenyan women. It is my hope that this paper increases our understanding of how and which

socioeconomic developments affect adolescents as they transition into young adulthood and consider when and if they should marry.

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