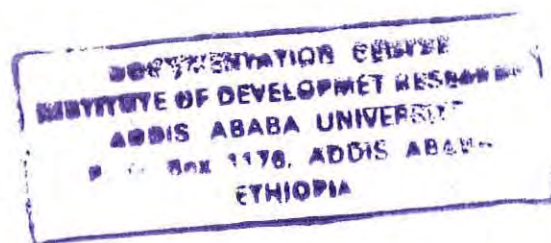


**ADDIS ABABA UNIVERSITY**  
**SCHOOL OF GRADUATE STUDIES**

**CORRELATES OF AGE AT FIRST MARRIAGE**  
**AMONG WOMEN IN ADDIS ABABA**

**BY**  
**ALEMU SHIFERAW TOLLA**



**ADDIS ABABA**

**JUNE, 2009**

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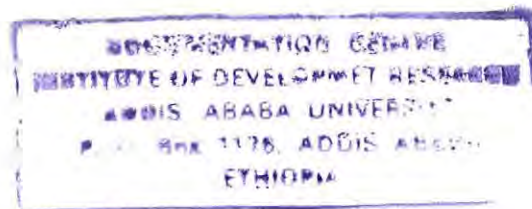
*Addis Ababa University*  
*School of Graduate Studies*

*Correlates of Age at First Marriage among Women in Addis Ababa*

By

*Alemu Shiferaw Tolla*

*A Thesis Submitted to Institute of Population Studies College of  
Development Studies Addis Ababa University in Partial Fulfillment  
of the Requirements of the Degree of Masters of Science (M. Sc.) in  
Population Studies*



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*Addis Ababa*  
*June, 2009*

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HACB  
2009

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## List of Acronyms

AFM	Age at First Marriage
CSA	Central Statistical Agency
CEB	Children ever born
EDHS	Ethiopia Demographic Health Survey
DHS	Demographic and Health Survey
FSUAA	Fertility Survey of Urban Addis Ababa
NFFS	National Family and Family Survey.
SMAM	Singulated Mean Age at Marriage.
TFR	Total Fertility Rate.
PHC	Population and Housing Census
UN	United Nation
EHA	Event History Analysis
HR	Hazard Rate
PH	Proportional Hazard
EAs	Enumeration Areas

## *Abstract*

*The age at first marriage has long been considered an issue of primary interest in the disciplines of marriage and the family as well women's studies. The issue has been taken on even greater importance recently due to the impact of a trend towards rising age at first marriage on fertility levels, with further potential far-reaching demographic, economic, and social ramifications, and also affected by these factors.*

*This study is primarily aimed at determining important socio-economic and demographic factors influencing age at first marriage among women of reproductive age residing in Addis Ababa.*

*Life time event history data collected from a total of 598 women of reproductive age group (i.e.15-49 years), who were living in Addis Ababa continuously starting from age 12 or birth were analyzed using descriptive, survival plot and Cox regression models. Descriptive and survival plot were used to show the differential in age at first marriage among different subgroup of covariate whilst , Cox regression was used as a multivariate analysis tool to measure the net effect of each covariate to effectively utilize the samples who were not married so far at the time of survey.*

*Results of bivariate analysis show that there is an increasing trend in mean age at first marriage (from 27 to 29 years), and proportion of never married (from 53 to 60 percent) between 1995 and 2009. The result of Cox regression on the other hand, revealed that educational level, educational enrollment, work status as well as mother's education are the most important factors playing significant roles in determining of age at first marriage among female residents of Addis Ababa.*

## CHAPTER ONE

### 1. INTRODUCTION

#### **1.1 Research Problem: Overview**

Marriage is an important institution both for individual and society at large. For the individual, it is the significant and memorable event in one's life cycle as well as the most important foundation in the family formation process. It is also a rite of passage that marks the beginning of individual's separation from the parental unit, even if generations continue to be socially and economically interdependent (Quisumbing and Kelly, 2003). For the society as a whole, it unites several individuals from different families and represents the creation of a production and consumption unit as well as one for the exchange of goods and services (Ikamari, 2005).

In terms of definition, different societies absorb marriage differently. For example, in African context getting marriage is viewed as a process rather than an event since a time at which a woman is married is not clearly known (Quisumbing and Kelly, 2000). The Dictionary of Demography (Pressat, 1985), nonetheless, defines marriage as the legal union of persons of opposite sex, the legality being established by civil, religious, or other means according to the custom and laws of each country. Similarly, according to the Population Council marriage in most societies is defined as the onset of the socially acceptable time for childbearing and the most predominant context for the childbearing in most countries (Quisumbing and Kelly, 2000).

In all regions of the developing countries, teenage marriage has declined considerably among women and the proportion married of women has fallen markedly (Mensch, et al 2005). Although delays in marriages are found in most all countries, the magnitude of the decline in the proportion married varies substantially across regions (Singh and Renee, 1996).

In Ethiopia, where until recently, marriage was both universal and early, the change in age at marriage and proportion of married women recorded in Addis Ababa are indeed remarkable, if not revolutionary (Kinfu,2001). The singulate mean age at marriage for females increased from below 20 years in 1967 to about 21 years in 1978 and to over 23 years in 1984. By 1995, this rose further to about 27 while that of males reached 34 years. The proportion of women in the

reproductive age group who were single has also increased substantially, from less than 15 per cent in the late 1960s to well over half 54 per cent in 1994(CSA,1997).

In Sub-Saharan Africa, levels matching that of Addis Ababa are probably found only in southern African nations such as Botswana. However, even in Botswana, since a substantial proportion of births occur out side of formal unions, marriage does not exert as much influence as it does in Addis Ababa (Kinfu, 2001).

Delayed age at first marriage affect completed fertility by reducing the number of years available for child bearing (Singh and Renee, 1996; Feldman, et al 2003; Ikamari, 2005 and Mensch et al, 2005).This strong relation between age at first marriage and fertility is clearly indicated in Ethiopia. Although fertility at national level has only recently shown signs of decline, fertility in the Addis Ababa, is exceptionally low, which is unique event in the history of the developing countries, especially in sub Saharan African standard (Lindstrom and Zewdu 2005). This below replacement fertility of Addis Ababa can be clearly reported in different National population census and survey reports. Among the national reports, the 1994 National Population and Housing Census results revealed for the first time of below replacement fertility in Addis Ababa (TFR 2.14) (CSA, 1998). The reported TFR (1.74) by Fertility Survey conducted in urban Addis Ababa in 1995 also verified the 1994 census report of below replacement fertility (CSA, 1997).

Recent EDHS conducted in 2000 and 2005 also revealed a total fertility of 1.9 and 1.4 respectively for the Addis Ababa (CSA and ORC Macro 2001 and 2006) showing that fertility has continued to decline in the city. For this exceptional cases many researchers, for example Abeje, (1995) and Kinfu, (2000), got many reasons in which rise of age at first marriage is the influential one among others. For example Kinfu (2000) proved the decline of fertility in Addis Ababa as a remarkable 'Malthusian' fertility transition led by both non- marriage and delayed marriage rather than by high contraceptive use. A study conducted by Sibanda his colleagues, in 2002 pointed out that the change in marital pattern in Addis Ababa has great impact on fertility reduction than the growth of contraceptive use. The big question that remains unanswered is, therefore, why a number of women in Addis Ababa delay marriage.

In addition to the above stated reasons, the following points attract the attention of the writer. Marriage marks as transition to adulthood in many societies, it is point at which certain options in education, employment, and participation are foreclosed and it affects housing requirement and community services. Given the key role of the marriage in individual's life history and its role in fertility and other demographic characteristics, few analytic studies have been undertaken on correlates of age at first marriage in Addis Ababa. To the knowledge of this writer, only two studies were conducted on the pattern of marriage in Addis Ababa, these were Abeje, 1995 and Haile, 1999. These researchers however, did not include many variables like parental educational background in their analysis which are important in the review related literature. Secondly, the findings are also not supported by the qualitative data in order to supplement mere statistical results. The current study thus tries to fill in this gap in using retrospective data in which life history calendar is used to cover detailed marriage history data and qualitative data.

## 1.2. Objective of the study

### 1.2.1 General Objective

The general objective of this study is to assess the trends, differentials and determinants of age at first marriage among women of reproductive age group in Addis Ababa.

### 1.2.2. Specific objectives

1. To examine the trends of age at first marriage in the city;
2. To assess the effects of individual socio-economic and demographic factors affecting the age at first marriage in the city; and
3. To assess the role of some parental educational level on the women's timing of marriage in the city.

## 1.3. Justification of the Study

The mean age at first marriage of women in Addis Ababa has increased from 24.5 in 1990 to 26.5 in 1995 (CSA, 1993 and 1997), which indicate that, there was an increase of exactly two years within five years interval. According to the result of EDHS 2005, median age at first marriage reaches around 21.9 years while it is 16.1 at the country level (CSA, 2006). Given such considerable discrepancy between the timing of average at first marriage between the capital city

and rural areas, it is interesting to know what the important factors are affecting age at first marriage and contributing for its alarming increments using primary and retrospective data collected by event history calendar. As prior studies were based on the 1990 NFFS and the 1995 Urban Addis Ababa Fertility Survey, they do not reflect the current situation of the population in the study area due to dynamic nature of socio-economic and demographic variables. This study is therefore, believed to give update information for those who are interested to deal with the provision of different social services.

## **1.4 Review Related Literature**

### **1.4.1 Theoretical Consideration**

In the first half of the 1960s, nuptiality in Europe started to begin a clear-cut process of decrease, which turned into real collapse in the Scandinavian countries. This trend was followed by other western European countries and in some developing countries very later. This decreasing trend attracted the attention of many scholars from different discipline and proposed diverse theories in order to account for such decreased inclination to get married, which is reflected in the progressive postponement of the age at first marriage and an increase in people's intentionally renouncing the marital union. Among these theories, the micro-economic frame work (i.e. New Home Economic) (Becker, 1973) and Career Entry Theory (Oppenheimer, 1988) has drawn the most attention.

#### **(i) Micro-Economic (New Home Economics) theory**

Becker's (1973) seminar article on the theory of marriage is one of the few works by economist that address the issue of age at first marriage. According to him, marriage is a manifestation of utility-maximizing behavior. The main logic behind this theory is that individuals marry only when calculated benefits of marriage exceed calculated costs. The benefits of marriage include economic scale, risk sharing, and labor specialization, where as, marriage costs include direct financial costs of marriage ceremonies, gifts, and setting up a new households as well as the need to attain a certain minimum standard of wealth or security before starting a family as well as the level of non market-productivity augmenting variables, such as education. He argued that the gain from marriage is often compared to remaining single for any two persons that is positively related to the relative difference in their wage rates, and the level of non market- productivity-augmenting variables, such as education.

Similarly, in his influential work entitled "A Treatise of the Family" growing educational attainment and labor force participation have reduced women's incentives to marry and have children. The major theme of this argument is based on the fact that as women receive education on an equal footing with men and has access to improved opportunities in the labor market the economic gains from marriage tend to become less significant. With decreased specialization in housework skills, women are no longer dependent on their partners' economic performance and can earn a living on their own (Becker, 1981). So the key variables in his theory are the increased education and work opportunities for women. Their increased autonomy and cultural and economic independence have reduced their material convenience in getting married.

**( ii) Oppenheimer Marriage Timing Theory (Carrier Entry theory)**

According to Oppenheimer, the explanation for the rising of women age at first marriage can be found in changing gender role in society. In the past, women could enter into marriage at a young age because the information on the features that were fundamental to their success in the marriage market (basic personal characteristics, physical attractiveness, religious confession, or social background) was already apparent at a young age. But according to Oppenheimer, the entry of women into paid employment changed the selection criteria and the significance of a woman's income has been growing. This means that even in the case of women it has become necessary to wait until the information on their earning potential is available. In contrast to Becker's theory, it is expected that women with higher education will marry later, but that in the end their chances of marrying will be higher.

Oppenheimer (1988) has show that women's employment may in fact increase rather than reduce the benefits for a family unit. With two earners, the family becomes less vulnerable to risks if one partner is unable to provide his/her contribution. If this is true, high-earning women should be particularly attractive partners.

Oppenheimer (1988) similarly, related the delay in family formation to uncertainty. During a period of educational enrolment, uncertainty is large. Other explanations that do not necessarily contradict the former have pointed to the societal norms about the sequencing of the life course

events, in particular the expectation that young people still enrolled in education should postpone family formation until the completion of studies.

In this paper we will examine how the two theories- micro-economic theory (NHE) and Career Entry theory- help us to understand the relationship between education, work force participation, and other individual and parental socio-economic and age at first marriage among women in Addis Ababa..

## **1.4.2 Empirical Findings**

### **1.4.2.1. Education**

Proceeding from the theoretical considerations outlined in the introductory section, the independent variables of main interest in this study are related to education and labor force participation. With respect to education, previous research has underlined the importance of making a distinction between educational enrollments and attainments.

#### **i / Educational Enrollment.**

Study conducted in Sweden in 2007 revealed that educational enrollments and age at first marriage (union) is usually incompatible. This incompatibility is explained by conflict of interests between spending one's time, energy and money on school or on the family and more limited resources of students, particularly in comparison with young people who have graduated from school (Thomson and Iiva, 2007). Studies conducted in China also revealed that, educational enrolment at least in full-time education has a negative effect on union formation and child bearing, in particular the later indicating a substantial degree of incompatibility between the roles of partner or parent and the student role (Feldman et al, 2003).

Similarly, a study conducted in Kenya in 2003 disclosed that school enrolment is an impediment to early marriage due to strong social norm preventing person in school from marring or even from co-residential partnerships. A study conducted in Indonesia also depicted that people who are still in school, regardless of their age are considered minor who are not yet ready to take on adult responsibilities of having a family (Sundaram, 2006).

## **ii / Educational attainment**

Educational attainment represents the highest level of education achieved rather than the individual's educational participation at the time of a life event. Within the micro-economic frame work, study documented using database compiled by UN Department of Economics and Social Affairs and Demographic Health Surveys (DHS) provide confirmation of Becker's theory of marriage. They demonstrate that the impact of educational attainment is considered to operate mainly through the accumulation of human capital. With their enhanced earning capacity, highly educated women have fewer economic gains from partnership and are more likely to postpone or even forego union formation compared to their less educated counterparts (Narumon, 2001; Mensch et al 2005; Katus et al 2007).

According to a study conducted in Sweden, based on data from the Swedish Survey of Family and Working Life in the 21<sup>st</sup> Century, stated that the opportunity cost of time spent on family increases with human capital and in the context of a gender-specific division of labor with in the family (Thomson and Eva, 2007). These costs are typically higher among women, which in turn rise age at first marriage in Sweden. Gangadharan, and Pushkar (2001) also stated that the effect of educational attainment on the marriage time through economic condition, i.e. increased education, is likely to open up economic alternatives to getting married. So, they confirmed that in Pakistan, increased educational attainment of women rise the utility of being single than the utility of being married. As such, many women in Pakistan preferred to stay single.

Within the frame work of theories stated above a study documented by Singh and Renee, (1996) and Ikamari, (2005) similarly stated that educational attainment may also delay marriage by increasing women's ability to regulate their fertility. This is mainly because education is positively associated both with contraceptive knowledge and with greater decisions making power in areas related to contraceptive choice. This effect is likely to be the strongest in contexts where marriage is the socially encouraged response to unplanned pregnancy.

In addition, study conducted based on data from 20 Asian countries pointed out that the negative effect of educational attainment on the marriage / union formation. It was proposed that education equip girls with non- traditional roles and providing them with the means to establish

viable alternatives to early marriage (Feldman et al, 2003). Similarly, study conducted in Estonia, Latvia, and Lithuania disclosed that, education is also thought to broaden a girl's perspective on the world, increasing her aspirations, present her with alternatives, for examples, working opportunities, and provide her with a more western out look on life, which can include wanting to have a grater influence on choice of her husband (Katus, et al 2007).

#### **1.4.2.2 Labor Force Participation**

The relationship between labor force participation and marriage timing is harder to predict for women. This is because there are several plausible associations between these two variables in the case of women. On one hand in consistent with Becker theory, there may be an incompatibility between work and family role and consequently a decline in marriage rate (Sundaram, 2006; Felman, 2003; Singh and Renee, 1998 and Mensch et al 2005). They pointed out that women's increased access to paid employment are a typical out come of structural change in the labor market accompanying economic development is thought to influence both women's and their parent's desires and ability to postpone marriage.

Similarly, study documented based on data from almost all developing countries indicated that, work experience, particularly in the formal sector, exposes women to new ideas and norms that discourage early marriage. Moreover, employment may provide the economic resources to postpone marriage and an economic incentive for parents to encourage their daughters to remain single during this economically productive period of young adulthood (Singh and Renee, 1996).

Becker's thesis on why marriage rates have declined in the west is also consistent with Katus et al (2007) argument that a major reason behind postponing marriage timing in the Estonia, Latvia, and Lithuania. They revealed that, women are no longer reliant on their husbands for financial security and stability. Similarly, in a study conducted in Mexico also revealed that urban women worked before marriage and after widowhood (Morin, 1997). This shows that the marriage and labor force participation is in compatible.

An other equally important aspect inconsistent with Becker, but consistent with theory of Oppenheimer, 1988 the fact that labor force participation increases the odds of marriage by

improving their marriage markets was confirmed in the study conducted in Indonesia based on Indonesia Family Life Survey (IFLS). This study pointed out that, economic independence might enhance the chances of partnership formation for women. It could do so because it makes women more attractive as partners because they will contribute to household income and will not be dependent on their husbands, or because, just as it probably does for men, economic independence signals some sort of progression to adult status.

A Third possibility is that, women's labour force participation has no effect on marriage timing. This can happen in case where women's labour force participation prior to marriage is a stop-gap arrangement till such a time that her parents are able to find a suitable match for her (Sathar, et al, 1988).

#### **1.4.2.3 Ethnicity**

Marriage patterns vary across and within countries among different ethnic groups. Such variations could be due to both cultural and socio-economic factors (Arnaldo, 2004). Some studies moreover, indicated that the effect of ethnicity is more significant than other socio-economic factors. For example, a study in Nepal singled out ethnicity as the most important factor in the determination of the timing of marriage and birth; much more important than education, religion, and place of childhood residence. Women's mean age at first marriage varied from 13.5 among the Brahmins to 17.8 among Tamangs while the difference among the literates and illiterates was very small (15.4 and 15.2 respectively) (Villarreal, 1998).

The effects of ethnicity on the age at first marriage may not be direct as that of education and income or occupation. Being of any ethnic origin by itself does not lead to early or late marriage. The reason behind the fact that, different ethnic groups have different marriage times and rate of stability, is that they have different elements of culture. It is common knowledge that some cultures value early and universal marriage while others allow late marriages and celibacy (Arnaldo, 2004).

Similarly, in Ethiopia, according to the 1994 Population and Housing Census indicated that the simulate mean age at marriage for females in most of the Zones of the Oromiya Regional state is

higher than that for most Zones of the Amhara Regional state. The difference ranges from as high as 18.1 years in Walaga (Oromia) to as low as 14.6 years in East and West Gojjam. In the case of Addis Ababa, according to 1995 fertility survey of urban Addis Ababa, the mean age at first marriage for the four major ethnic (Amhara, Gurage Oromo & Tigraway was 16, 17, 17 and 17 respectively) showing very little variation (CSA 1997).

#### **1.4.2.4. Religion Affiliation**

Religion is considered to influence women's marriage timing primarily because it provides an important transmission channel of marriage norms and gender roles (Feldman, 2003). However, the effect of religious commitment on marital timing can be hypothesized in both directions. Conservative and traditional sex-role attitudes associated with religious practice may encourage early marriage. On the other hand, religiosity may act a deterrent to appreciated marriages given the catholic emphasis on prenuptial sexual chastity.

Similarly, according to FSUAA 1995 there was also a variation in the mean age at first marriage of women of different religion groups. Catholic women reported the highest age at first marriage (24 years) (CSA, 1997).

#### **1.4.2.5 Birth cohort of the women**

According to study conducted in Kenya data drawn from the 1998 Kenya Demographic Health Survey (KDHS), revealed that women born in the older generations were more likely to marry early compared to those born recently. For example, women born between 1948 and 1958 were 1.77 times as likely as those born between 1967&1978 to marry early (Ikamari, 2005). Similarly, study conducted in Asian countries pointed out that, women's later birth cohort seems to be generally associated with women's older age at marriage implying that more individualistic, social and normative environments in which women grew up may encourage women to postpone marriage (Tsuya, 2001).

Likewise, study conducted in China, disclosed that marriage cohort has a significant effect on wife's age at first marriage. This age at first marriage increase with time, indicating the positive

effects of socio-economic development, cultural change and the family policy (Feldman et al, 2003).

In Ethiopia, EDHS (2005) also pointed out that the proportion of women married by age 15 has declined from 38 percent among women age 45-49 to 13 percent among women aged 15-19 birth cohort (CSA, 2006). Likewise according to Ethiopia National Family and Fertility Survey, the mean age at first marriage by calendar year indicates that, there were increasing trend over time. The women who married in 1976, and after entered in to marital union at a relatively higher age than those who married earlier or before 1976 (CSA, 1993).

#### **1. 4.2.6 Parental Socio-Economic Status**

According to Quisumbing and Kelly (2003), in their work on the six developing countries including Ethiopia, parental socio-economic characteristics are important determinants of age at marriage of their children. For example, the father's land, a proxy for prenatal wealth, and schooling of mother's both increases age at first marriage of their children. Niu, (2006) also indicated that, the indirect effect of parental schooling on the age at first marriage of their children through their expectation of their educations. He found that the higher the father's and mother's education level, the higher the adolescent's education expectation and this in turn increase the age at first marriage among youth in three Asian cities.

According to study in Pakistan, the hazard of marriage is significantly lower for women with literate parents. In fact the estimated coefficients show that the hazard of marriage is lower by 23 per cent for women with literate mothers and is lower by 11 per cent for women with literate fathers. Both of those essentially translate to a higher age at marriage for women with literate parents (Gangadharan and Pushkar, 2001). Likewise, Children whose parents are well educated usually have better family economic status which in turn decreases the probability of marriage of their daughters (Feldman et al 2003).

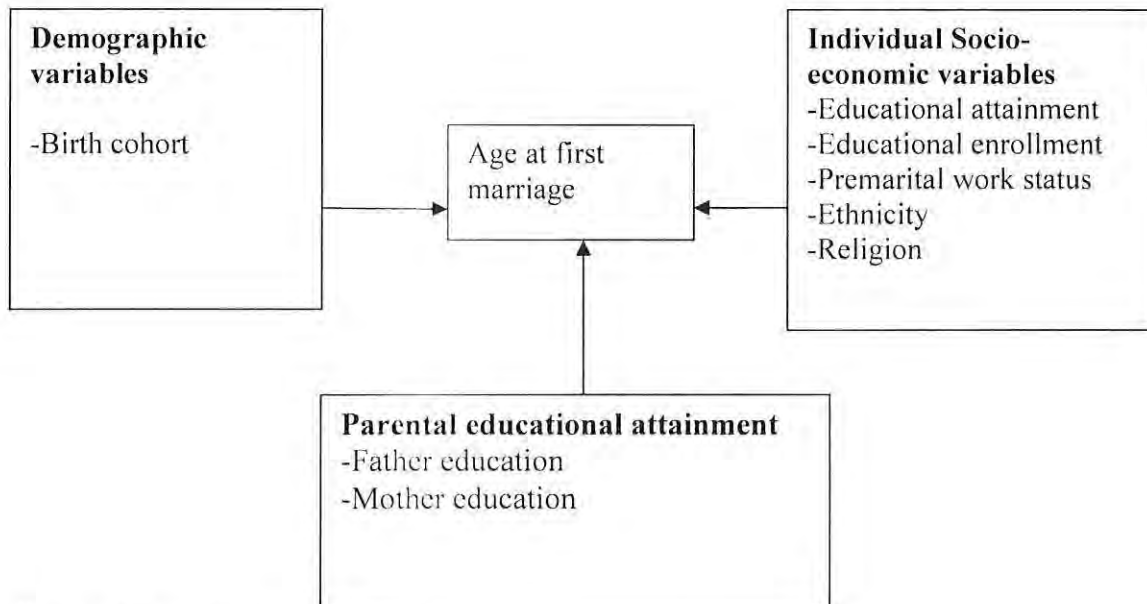
According to Arnaldo (2004) educated parents daughters marry lately than uneducated families due to the following logic. Firstly, educated parents tend to think their children's marriage is the children's own business. Secondly, it is not something parents arrange for them like what used to

be. Thirdly, educated parents never feel embarrassed in the neighborhood when single growing up children stay home until after they should have got married. Fourthly, today educated parents do not have a social network in the neighborhood or large community as they used to.

### 1.5. Conceptual Frame Work

For the purpose of this study, in examining the determinants of the age at first marriage, parental and personal socio-economic and demographic factors are independent variables whereas, probability of married at given age is dependent variable. The following conceptual framework indicates the relation between selected independent and dependent variables based on the theories and review literature.

**Fig 1.1. Conceptual Framework**



Source: Formulated by author

### 1.6. Definition of Terms

The definitions of the following terminologies used in this study are given based on their use in different literatures like DHS and others.

**Age at first marriage:** refers to the age at which the females ever-married for the first time.

**Couples:** refers to male and female who are in marital relationship or union.

**Educational attainment:** represents the highest level of education achieved rather than the individual's educational participation at the time of a life event.

**Educational Enrollment:** refers to the individual's educational participation rather than the highest level of education achieved at the time of life event.

**Ever married:** refers to persons who have been married for at least once although presently they may or may not in marital life. This group consists of currently married, widowed, divorced, and separated persons.

**First marriage:** refers to event at which individuals move from single hood (bachelor or spinster) to married status.

**Kebele:** refers to the lowest administrative hierarchy in Ethiopia government that exists below woreda.

**Marriage:** refers to the legal union of persons of opposite sex, the legality being established by civil, religious or other means according to the custom and laws of each country.

**Mean age at first marriage:** refers to the average age at which an individual marry for the first marriage.

**Nuptiality:** refers to frequency, characteristics and dissolution of marriages in a population (or, more generally, all sexual unions involving rights and obligations fixed by law or custom.

**Retrospective survey:** refers to survey, which asks responds about events, experiences or views with reference to any period of interest before the interview date (before age at first marriage).

**Single:** refers to persons who have never been married during reference period.

**Singulate mean age at first marriage (SMAM):** An estimate of the mean age at first marriage, derived from the proportion of each age group not yet married, as shown by a census or survey.

**Students:** refers to persons who were attending educational institutions such as school, college or university on full- time basis with in six month before survey date or age at first marriage.

**Sub-city:** refers to the largest Ethiopia government administrative hierarchy of the City that consists many kebeles with it.

**Working:** A working person is someone who engages in any kind of work for pay during the reference period.

### **1.7. Hypotheses of the Study**

Based on the theoretical frame works and empirical findings, the following hypotheses are formulated.

1. The effect of educational attainment on the likelihood of first marriage is negative; i.e. women with higher levels of education would enter into marriage less often and at later age.
2. School enrollment will have a negative effect on the entry into first union/ marriage.
3. Premarital work of the women has a negative effect on the chance of entering in to marriage.
4. Older birth cohort women have higher likelihood of marrying at early age than women belonging to younger birth cohort.
5. Women born to parents of higher educational level (especially mothers) marry at later ages than their counterparts do.

### **1.8. Paper Organization**

To address the aforementioned issues, the thesis is structured into six chapters. Chapter one starts with a brief discussion of problem of statement, theoretical consideration and some review of empirical works, which highlights the relationship between timing of marriage and other socio-economic and demographic variables. Chapter two describes the data source and methods of analysis. The third chapter describes the descriptive of the study area and population. The fourth chapter deals with univariate analysis i.e. the trends in age at first marriage while, the fifth chapter discusses the differentials (bivariate) and determinants (multivariate) of the timing of the first marriage in the study area. Chapter six discusses the major findings, and the chapter seven includes the summary of findings, conclusion and recommendation.

## CHAPTER TWO

### 2. DATA SOURCES AND METHODS OF ANALYSIS

#### 2.1. Target Population

In most study of the determinants of age at first marriage two main strategies are in wide use; the information only from ever-married women and data for all women. However, when a large proportion of women are in the never-married state (53%), as presented in the 1995 Urban Addis Ababa Fertility Survey (CSA, 1997) an analysis that is based solely on ever-married women may produce a biased result. This is primarily because such data reflect the experiences of a selected group of fast marrying women rather than of the total population whose experience, due to rapid changes in marriage pattern, may be different from those who are already in union. For this reason the target of the present study is all women in the reproductive (i.e.15 to 49 years) but continuously living in Addis Ababa or since birth starting from their age 12 until the time of survey.

#### 2.2 Data Source

Quantitative primary data was used for the materialization of this study. This primary data was collected through detailed household survey based on structured questionnaire. Using retrospective survey (i.e. starting from age 12 to age at first marriage for those who have been married but to the survey date for those never married) premarital information on education, work status, religion, ethnic, educational status of their parents and others related information were collected for all sampled women of the reproductive age. In addition, all ever married women were asked about their age at first marriage while, never married women was asked about their preferred time of marriage in the future.

An in-depth interview with selected key informants was also made to substantiate and cross-check the information obtained from the questionnaire. The need for the in-depth interview arose from the fact that some important points in people's attitude and feelings cannot be exhaustively captured by the questions in the questionnaire.

In addition, further information was collected from records of administrative offices, journals, published or unpublished research papers, books and other sources so as to support

### 2.3. Study Design

Cross sectional retrospective study design was employed to undertaken this investigation as it is quite important for the collection of basic information from the respondents, and to look at the effects of different time varying covariates across the life course of the respondents.

### 2.4. Sample Size Determinants

The sample size of the study was determined based on standard statistical procedures and assumptions. The sample size is determined based on the formula proposed by Bartlett and colleagues, 2001).

$$n = p(1-p) \left(\frac{z}{e}\right)^2 \quad \text{Where,}$$

$n$  = is the sample size.

$z$  = is the number of standard error units that are found to be corresponding to 95% confidence level, which is given to be 1.96.

$p$  = the proportion of married women in the reproductive age category in Addis Ababa, i.e. 0.47 (CSA, 1997).

$e$  = is a margin of error or limit of accuracy to be tolerated in estimating proportion of married women which was taken to be 0.04 or 4%.

Therefore, the required sample size was

$$n = \frac{(1.96)^2 * 0.47 * (1-0.47)}{(0.04)^2} = 598 + 10\% \text{ non-response rate equal } 658 \text{ eligible sampled women of reproductive age group.}$$

### 2.5. Sampling Technique and Procedure

The sampling technique used in this study was multi-stage random sampling technique. Firstly, from 10 sub cities of Addis Ababa three sub-cities were selected randomly to avoid the bias in the selection process. Secondly, a kebele was identified again randomly from each of the selected sub-cities, since more or less the numbers of kebeles in each of the sub-city are nearly equal between 9 and 11.

Finally, eligible women in the reproductive age group were proportionally selected by systematic random sampling techniques based on the information of 2007 Population and Housing Census of Ethiopia. Operationally, to locate the study individuals the list of households in all

enumeration areas (EAs) of each selected kebeles, which was made by Central Statistical Authority (CSA) of Ethiopia in 2007, was used as frame work.

Based on enumerations areas map and the list of households in each selected kebeles 598 eligible women were identified. This selection process is with a reasonable assumption that, there is a woman in reproductive age group and continuously living in Addis Ababa since birth or age 12. Practically, only few households did not satisfy this assumption. In this case the enumeration was continued in the similar procedure until the desired sample size i.e. 598 was obtained. More detail procedure is indicated in Table 2.1.

Table 2. 1. Sampling technique/procedure

Sub-City	Number of Kebeles	Selected Kebele	Number of Households	Eligible women Sample size selected
Kolfe Keraniyo	10	10/11	11,051	293
Arada	10	01/02	4,940	131
Gulele	10	03/04/05	6,584	174
Total			<b>22,575</b>	<b>598</b>
Non-response rate	-	-	-	10% (60)
Grand total	-	-	-	<b>658</b>

**Source:** Computed based on data of Population and Housing Census 2007.

## 2.6. Data Collection Instruments

The questionnaire, which consists mostly of structured questions, was prepared to collect retrospective information on socio-economic and demographic information of the respondents, and their parents. The questionnaire was originally prepared in English and then translated in to Amharic for easy understanding by the data collectors and respondents.

## **2.7. Recruitment and Training of Field Staff and Pilot Survey**

Six female data collectors and two supervisors (one per three data collectors) were recruited. Because of cultural, religions and different barriers in the study population for the sensitive data like marriage issues, it was planned to use female data collector than men to improve the quality of data being collected. The recruitment of the data collectors and supervisors were done on the basis of their experience in data collection and supervision.

Training of data collectors was conducted for two days. The content of the training includes explaining the purpose and objective of the study, procedure of data collection, how to approach the participants and having due respect for the consent and ethical values of the researcher undertaking. Pilot survey from ten women in reproductive age group was collected in the city outside the sampled kebeles to assess the content, clarity, and logical flow of the questions and the time needed on average to fill out a single questionnaire.

## **2.8. Data Quality**

Data quality assurance is an important procedure of research works and it has very much to do with the analysis of data and the interpretation of results in investigative findings. To assure the quality of the data, a properly designed data collection instrument was used. The questionnaire was prepared after reviewing relevant literatures that was based on predetermined variables. Everyday, all of the collected data were reviewed and checked for completeness and relevance by the supervisors and the principal investigator. Like wise, the consistency of the data was assured after entering each of the questionnaires into computer by running appropriate program before making them ready for analysis.

## **2.9. Methods of Data Analysis**

The method of data analysis in this study varies from a simple to advanced model mainly based on the type and nature of the variable and data used in the study.

### **Univariate and bivariate analysis**

Descriptive statistics like frequency, percentage, and cross tabulations were used to give an over view of the data. Life table techniques (survival plot) were also used in order to show the pace at

which a group of single person is decreased annually by marriage and to indicate the effects of some background characteristics up on the age at first marriage of women in a study area.

### **Multivariate analysis**

The age at first marriage, the dependent variable in this study, was interpreted as survival time from a single to a married state. The best recommended method for such analysis is life table techniques especially the Cox regression model (Thompson et al, 2003).

There are two major reasons why this research issue cannot be addressed via straightforward multiple regression techniques. First, the dependent variable of interest (survival time) is most likely not normally distributed that leads to a serious violation of an assumption for ordinary least squares multiple regression. Second, there is the problem of censoring, that is, some observations will be incomplete (Allison, 1984).

The proportional hazard model is the most general of the regression models because it is not based on any assumptions concerning the nature or shape of the underlying survival distribution. The model assumes that the underlying hazard *rate* (rather than survival time) is a function of the independent variables (covariates); no assumptions are made about the nature or shape of the hazard function. The model is written as:

$$h \{(t), (z_1, z_2 \dots z_m)\} = h_0(t) * \exp(b_1 * z_1 + \dots + b_m * z_m) \text{ (Cox, 1972).}$$

Where  $h(t, \dots)$  denotes the resultant hazard, given the values of the  $m$  covariates for the respective case  $(z_1, z_2 \dots z_m)$  and the respective survival time  $(t)$ . The term  $h_0(t)$  is called the baseline hazard; it is the hazard for the respective individual when all independent variable values are equal to zero.

### **Assumptions.**

While no assumptions are made about the shape of the underlying hazard function, the model equations shown above do imply two assumptions. First, they specify a multiplicative relationship between the underlying hazard function and the log-linear function of the covariates. This assumption is also called the proportionality assumption. In practical terms, it is assumed

that, given two observations with different values for the independent variables, the ratio of the hazard functions for those two observations does not depend on time.

The second assumption of course, is that there is a log-linear relationship between the independent variables and the underlying hazard function.

### **Cox's Proportional Hazard Model with Time-Dependent Covariates**

An assumption of the proportional hazard model is that the hazard function for an individual (i.e., observation in the analysis) depends on the values of the covariates and the value of the baseline hazard. Given two individuals with particular values for the covariates, the ratio of the estimated hazards over time will be constant -- hence the name of the method: the *proportional hazard* model. The validity of this assumption may often be questionable. In this case, the impact of the covariate is clearly dependent on time.

### **Testing the Proportionality Assumption**

There are many applications where it is likely that the proportionality assumption does not hold. In that case, one can explicitly define covariates as functions of time.

$$h(t,z) = h_0(t) * \exp\{b_1 * z + b_2 * [z * \log(t)]\} \quad (\text{Thompson, 2003})$$

Thus, in this model the conditional hazard at time  $t$  is a function of (1) the baseline hazard  $h_0$ , (2) the covariate  $z$ , and (3) of  $z$  times the logarithm of time. In other words, the conditional hazard at each point in time is a function of the covariate and time; thus, the effect of the covariate on survival is dependent on time: hence the name time-dependent covariate. This model allows one to specifically test the proportionality assumption.

### **Assessment of Proportional Hazards**

In order to use the Cox model, we must check the assumption of whether the effects of covariates on risk remain constant over time or not. There are different methods of checking the proportionality assumption of the regression. In this study, the proportionality assumption was examined statistically by plotting log minus log (LML) on the survival time and it was satisfied (see appendix 4).

Hazard rate measures the risk of making a transition from the absence of an event to the presence of an event, such as from being single to being married. Hazard rate is essentially a transition rate. The rate is measured by the ratio of number of cases experiencing the event at the end of the time interval to the total number of cases exposed to the risk of experience the event at the beginning of the time interval. A lower hazard rate implies a longer duration of waiting time for the event to occur, i.e. older age at first marriage. In this study, the coefficients of the covariate were transformed by exponentiation and interpreted as relative risk.

The result was presented as the relative risk, which represent the relative likelihood of a woman with the specified characteristic of marrying in comparison to a woman who would be in the appropriate reference group. The risk ratio of the reference group or category is one (1.00). If the risk ratio of a given category is greater than 1.00, this indicates greater risk of marrying, and when the risk ratio is less than 1.00, it indicates a lower risk of marrying compared to the reference group. In this analysis, a variable was reported as having a significant effect, if its effect on the timing of marriage is statistically significant at least at the 5 percent level of significance.

## **2.10. Variables Description**

### **A/ Dependent Variable**

The dependent variable in our model is the likelihood of entry in to a first marriage. The exposure is measured stating at the age 12 of the respondent and continued until the entry in to first union (for married women) or until censoring at the time of survey (for never married). It is denoted by 1 if the event has occurred but 0 if the event is not occurred at the time of survey.

### **B/ Covariates / explanatory variables**

#### **i / Socio-Economic Variables**

##### **Women Educational attainment**

This variable refers to the highest grade level of individuals rather than institutional participation. Categorization of such variables is done in such a way that it reflects variation in the level of respondent's knowledge in making decisions with regard to not to marry early. Taking the school system in Ethiopia, into consideration educational attainment of respondents could be classified as (1) illiterate or no education, (2) primary (1-8), (3) secondary and higher. From these three categories, using no education as reference category, two dummy variables were constructed.

## **ii / Demographic Covariate**

### **Women's birth cohort**

This variable is included as a proxy for likely normative environment in which women grew up as well as macro structural changes that shaped women's economic opportunity structure. This variable was included in the model having categorized it into three broad categories. These are women who born between (1) 1960-1969, (2) 1970-1979, (3) and after 1980 and then after. The reference category used in the model was birth cohort after 1980.

## **iii / Parental Socio-Economic Status**

### **Parental Educational attainment (Father's and Mother's)**

Categorization of this variable is taking place by taking the school system in Ethiopia in to consideration. Thus educational attainment of parents was classified into (1) illiterate or no education, (2) primary (1-8), (3) secondary (grade 9-12) and higher. The reference category for both father education and mother is primary education.

## **C/ Control variables**

### **Childhood Place of Residence:**

Women's childhood place of residence is expected to capture the effect of urbanization on women's marriage timing by measuring the effects of more individualistic social and normative environments in cities where women grow up. In the analysis women's childhood place of residence is grouped into three categories (1) in Addis Ababa (2) in other urban areas; and (3) rural. From these three categories, a woman grown up in Addis Ababa was used as reference category.

### **Number of Siblings**

According to literature number of siblings which are expected to reflect the family socio-economic conditions (Children from small families are often led to invest more in other areas of life and are drawn away from an early marriage) on timing of marriage can be considered in the model being categorized as (1) None (2) One (3) Two and (4) Three and above. The reference category used in the model was "None".

### **2.11. Communicating of Finding**

The finding of this study will be communicated to concerned institution or individual and other interested groups. This can be accomplished through submission reports, presentation of findings at appropriate meeting and through publication on scientific journals.

### **2.12. Limitation of Study**

Even though, greater effort was made by the data collectors in order to estimate the exact age by relating with greater and known events like the dawn fall of Derg (1991) and 1974 the dawn fall of Haileselassie etc. The most severe limitation in this study was raise from errors in reporting age data. The fact that age is the most important variable in this study makes the problems even worse. This is mainly due to the inherent nature of retrospective survey method, which is subjected to the recall lapse of reporting past event especially age.

### **2.13. Ethical Consideration**

Ethical clearance was obtained from Addis Ababa University, College of Development Studies, Institute of Population Studies. the purpose of the study was explained to the respondents and informed consent was obtained from each study subjects. The result was confidential and the anonymity of the respondents was kept.

## CHAPTER THREE

### 3. DESCRIPTION OF STUDY AREA AND RESPONDENTS

#### 3.1. Description of Study Area

The demographic profile of any society is a product as well as a determinant of the socio-economic and other related forces operating at various levels of the population (Kinfu, 2001). As a framework to the subsequent discussion on the dimension and causes of reproductive change in Addis Ababa, this topic reviews the socio-economic and demographic characteristics of the study area. The review was mainly focus on variables and factors that are often hypothesized as having significant influence on demographic processes, particularly on marriage behavior and some related reproductive background in order to give hint for the reader about the change over time. These include population size and change, fertility trends, educational attainment, female labor force participation, religion and ethnicity of the study population using existed data from different surveys and census.

##### 3.1.1. Population Size of Addis Ababa

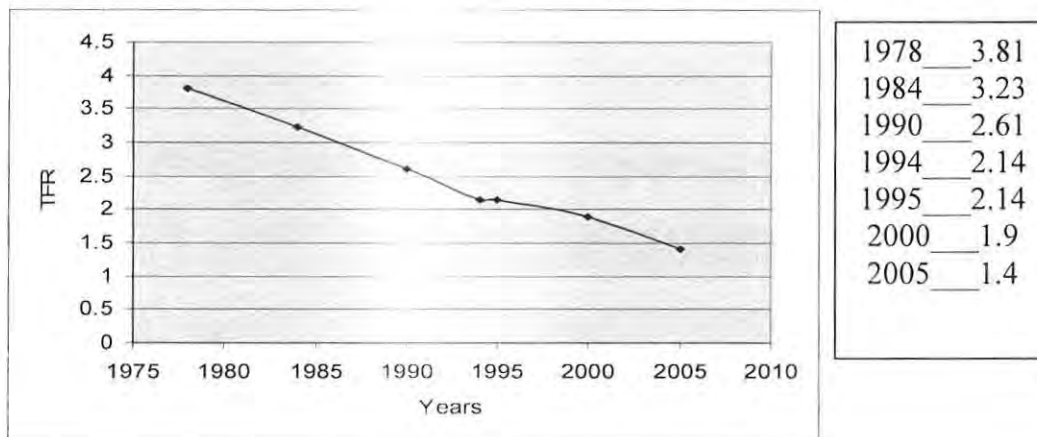
About 34 per cent of the urban population in 1961, 33 per cent in 1984 , 30.4 per cent in 1994 and 23 percent in 2007 were living in one city, of Addis Ababa, which is so far the only urban centre in the country with a population of over half a million people (Kinfu,2001). As to sex ratio according to latest data of 2007 PHC indicate that around 1,304,518 (47.6%) male and 1,433,730 (52.4%) female population living in the city (CSA, 2008). The sex ratio is 91 to 100 and this indicate almost there is no significant variation between number of male and female in the city, which is expected to rise age at first marriage as observed in South East Asian countries at the moment (Narumon,2001).

##### 3.1.2 Fertility Rate

There is a sharp decline in TFR of the city almost form 1978, data compiled in the second demographic sample survey in the history of Ethiopia, until the second EDHS 2005. All sources show a consistent trend, whereby total fertility which was about four in the late 1970s declined to

about three in the first half of the 1980s, to 2.6 in 1990, 1.8 in 1994 and 2.14 in 1995 (CSA,1997) and finally to around 1.4 according to 2005 EDHS (CSA, 2006).

Fig 3.1 Trends of Total Fertility Rate in Addis Ababa Between 1978 and 2005.



Source: 1978-1995[CSA, 1997] and CSA, 2001 and 2006

### 3.1.3 Education and Literacy Rate in the City

As shown in table 3.2 there has been a consistent and overall increase in the educational attainment of female in Addis Ababa's in the past three or so decades. Female literacy rate in the city increased from less than 40 per cent in 1967 to about 54 per cent in 1978, and to well over 80 per cent by the early 1980s. This trend reflects both the rapid expansion of school enrolment among girls as well as the greater involvement of women in the adult literacy program. This also tells us rise education attainment has some thing to do with rising trends of female age at first marriage in the study population.

**Table: 3.1** Female literacy status of the adult population of Addis Ababa, in 1967-1994.

Age group	Proportion of Literate of Women			
	1967	1978	1984	1994
15-19	46.6	66.4	92.6	88.5
20-24	21.8	45.5	89.4	89.1
25-29	15.5	28.3	82.4	84.9
30-34	10.2	20.5	77.9	77.6
35-39	8.7	15.4	70.3	69.9
40-44	6.2	7.7	60.1	61.1
45-49	7.8	8.4	53.1	55.2

Source: CSA, 1972, 1979, 1987, 1995

### 3.1.4 Female Labor Force Participation

As shown in the table, since 1978 the labor force participation rate in Addis Ababa for each age group has increased substantially. For instance, in 1978 only one-third of the women aged 30-34 were either employed in an economically gainful activity or actively seeking one. By 1984 this proportion had increased to almost 40 per cent and by 1994 to 60 per cent. Similarly the detailed data about women labor force participation is not disclosed by 2007 PHC.

**Table 3.2** Labour Force Participation rates for Women, Addis Ababa: 1978-1994

Age of women	Labor force participation rate		
	1978	1984	1994
20-24	44.5	55.9	67.7
25-29	37.0	47.1	65.5
30-34	33.2	40.1	57.1
35-39	29.8	33.8	47.3
40-44	30.3	32.6	41.3
45-49	28.9	29.9	34.8

Source: CSA, 1979, 1987, 1995

The overall picture that emerges from a review of the demographic and socio-economic in Addis Ababa is multifaceted. Significant changes have been recorded in areas such as schooling, and labor force participation and status of women.

### **3.2. Socio-economic and Demographic Characteristics of Respondents**

The survey has collected a wide range of in formations which are crucial in the study of the determinations of age at first marriage. These include the demographic and socio-economic backgrounds of the women, which are expected to have a profound effect on behavior, values and attitudes associated with their marriage performance.

In view of analyzing determinants of age at first marriage and estimating the differential effect of each of the major background variables collected in the survey, it is necessary to bring forward an overview of some of the characteristics of the women covered in the study area. So, the background characteristics of the 598 women age 15-49 interviewed in 2009 are shown in Table 3.3. The information is important in that it provides the background for interpreting findings presented later in the report.

#### **3.2.1 Demographic Characteristics**

The age distribution of women included in the survey (Table 3.3) shows a typical pattern observed in most developing countries presenting a predominantly young population resulting from high fertility and declining mortality. The proportion of women in the successive age groups shows a decreasing pattern as age increases except in the age group 40-44, and 45-49 which presented a slightly higher proportion of women than the preceding age range. This might be due to the dominance of in-migrants in this age group or shifting of women from the neighboring age groups to the 40-45 and above years age (CSA, 2006).

**Table 3.3** Percentage Distribution of Respondents to all Socio-economic and Demographic characteristics included in study, Addis Ababa 2009.

<i>Socio-economic and Demographic variables</i>	<i>Number of women at the time of survey</i>	<i>Percentage of women</i>
<b><i>Demographic Variables</i></b>		
<i>Age</i>		
15-19	170	28.4
20-24	129	21.6
25-29	94	15.7
30-34	59	9.9
35-39	44	7.4
40-44	50	8.4
45-49	52	8.7
<i>Marital status</i>		
Never married	354	59.2
Ever married	244	40.8
<i>Age at first marriage</i>		
<17	126	51.6
18-19	72	29.5
21-23	28	11.5
>23	18	7.4
<b><i>Socio-economic variables</i></b>		
<i>Educational Level</i>		
No education	123	20.5
Primary(1-8)	161	27
Secondary +	314	52.5
<i>Premarital educational Status</i>		
attending school	309	52
Not attending school	289	48
<i>Premarital work Status</i>		
Working	127	21
Not working	471	79
<i>Ethnicity</i>		
Amhara	351	58
Oromo	209	35
Others	38	7

Table 3.3 Continued...

<i>Religion</i>		
<i>Christian</i>	444	74.2
<i>Muslim</i>	154	25.8
<i>Father's education</i>		
<i>No education</i>	124	21
<i>Primary(1-8)</i>	186	31
<i>Secondary+</i>	288	48
<i>Mother's education</i>		
<i>No education</i>	196	33
<i>Primary(1-8)</i>	265	44
<i>Secondary +</i>	137	23

**Source:** Own survey data, 2009

Information on current marital status was collected by using a question, which only aimed at identifying whether the woman was ever married or not at time of the survey. According to Table 3.3, the marital status distribution of the women indicates that the majority of the women in the reproductive ages were never married (59.2 %) which is almost consistent with the 1995 AAUFS, which was 57 and 43 percent respectively (CSA, 1997).

Similarly, in this survey information on age at first marriage was collected for all ever married women by posing a question "How old were you when you got married for the first time?"

According to the data, about 25.8 percent of women included in the sample married before the age of 15 years. Out of the ever married women, the proportion who entered into marital union before attaining the age of 20 years is more than 75 percent of the total women interviewed in the survey. Out of the total ever married women, the proportion who married before the age of 18 years is 50 percent, which were 63.6 in 1995 UAAFS (CSA, 1997). This in turn shows the rise of age at first marriage over time.

### 3.2.2 Socio-economic Characteristics

The distribution according to the different socio-economic characteristics of women interviewed in the survey is present in Table 3.3. In survey, information related to education of each selected woman was collected using two different questions. First the interviewer asked the respondents about their educational attainment (level).

The data on education level shows, about 27 percent of the women were categorized under the primary educational level, women who have attended at least secondary school level constitute about 52.5 percent of the total sample which was only two- fifth according to 1995 AAUFS (CSA,1997). This also gives us an ample evidence for the rise of literacy level among women in Addis Ababa between 1995 and 2009.

Second, the interviewer asked whether the woman has enrolled in school system during the six months before the survey date (for never married) or before getting married for full time or not. The data on educational enrollment show that about 52 percent were students within the reference time, while, about 48 percent were not enrolled in any school.

The major ethnic groups in the city are Amhara (58 %), Oromo (35 %) and others, 7 % (includes 5 % Gurage and 2 Tigire).

The distribution of respondents by religious affiliation shows that the majorities of the women are in Christian category (with 62.2 % Orthodox and 12. % protestant) and followed by Muslims (25.2%). Compared to 2007 Population and Housing Census the pattern of the distribution by religion affiliation shows a similar pattern.

As regards to the premarital work status of women in the sample, most of them (79 %) were not working. Working women constitute only 21 percent of the interviewed women, which inconsistent with 1995 AAUFS, at which around 44.7 percent of the women were working. This is may be partially due to rise of women unemployment even if there is rise female labour force participation in the city.

In survey, in addition to individual socio-economic status, parental educational status was also collected due to its contribution in the decision of marriage time by their daughters directly or indirectly. The data revealed that 21 %, 31 % and 48 % of respondents' fathers are no education, primary and secondary and above respectively. Similarly, the data showed that 33 %, 44 % and 23 % of respondents' mothers are no education, primary and secondary and above respectively

## CHAPTER FOUR

### 4. TREND OF AGE AT FIRST MARRIAGE: UNIVARIATE ANALYSIS

The presentations of the findings start from descriptive analyses, which address the trends in the timing of the first union or marriage. The data used to indicate the trends of women age at first marriage in Addis Ababa is used from different surveys and census conducted in the country at different period. These are 1978 Addis Ababa Demographic Survey, 1984 and 1994 Population and Housing Census, 1990 NFHS, 1995 UAAFS and survey conducted for the purpose of this study in 2009.

There are different ways of ascertaining the trends in the age at first marriage. But techniques used in this study are: (1) proportion never married, and (2) singulate mean age at marriage.

#### 4.1 Proportion Never Married

When population is classified by marital status categories, separately by sex and age, useful information is revealed. The proportion of single at the youngest ages indicate the tempo of recent marriages, while proportions still unmarried at older ages indicate the prevalence of nuptiality and conversely, the prevalence of life long non-marriage. Thus we can study trends in nuptiality by looking at proportion of singles in each age group and its patterns over time.

Looking at the data in fig 4.2 it shows that, there has been an appreciable gradual change in the proportions single over time in all age.

Table 4.1 shows that there are the substantial increases in the proportion of never married women and among all age groups. The proportion never married among women aged 15-19 increased from 81 percent in 1978 to 97.5 percent in 2009, and for those aged 20-24 it increased from 29 percent to 85 percent. While proportion single was increased among all age groups, the largest increases occurred among women age 20-24 followed by those aged 25-29 and 30-34, respectively. It should be borne in mind that the specified age groups are the most fertile age ranges. From the above data it can be noted that a change in the nuptiality patterns of women in the reproductive ages, i.e., from younger age pattern of marriage to late marriage pattern has occurred over the time under consideration.

Table 4.1 Percentage Distribution of Never married of Addis Ababa 1978-2009

Age	Years					
	1978	1984	1990	1994	1995	2009
15-19	81.2	89.1	96.3	94.8	94.4	97.5
20-24	29.0	52.6	65.7	74.5	77.5	85
25-29	6.5	18.6	27.1	44.5	41.8	58.5
30-34	2.3	7.3	5.6	18.4	16.9	30.5
35-39	1.2	2.9	1.1	6.8	5.4	9.3
40-44	0.8	2.0	1.0	3.4	1.9	2
45-49	1.1	1.7	1.0	2.1	1.6	2.0

Source: for (1978-1995) [CSA, 1997] and 2009 computed by author from own survey data

The observed changes in the proportions entering a marital union at the successive age groups particularly at ages 20-34 can be a good indicator of a postponement of marriage among the younger generations showing a rise in age at first marriage during the period under reference.

#### 4.2 Singulate Mean Age at First Marriage

Another important measure of changes in the Age at first marriage over time is the Singulate mean age at marriage. The singulate mean age at marriage (SMAM) is an estimate of the average number of years lived in the single state by a cohort of women before their first marriage. It is also one of convenient measure of the change in nuptiality pattern derived from the proportions single by age (Hajnal, 1953).

This measure is preferable than that constructed from marriage histories in depicting marriage trends, because the estimate it provides corresponds to a more recent time period (Kinfu, 2001). There are two methods which are very often used as they are quite simple to calculate. The two methods generally used are census synthetic cohort method and decade census synthetic cohort method.

The census synthetic cohort method was evolved by John Hajnal, a European demographer in 1953. The method is quite simple in computation which utilizes the data on proportions of single persons by age. The second method was decade census synthetic cohort proposed by Agarwala an Indian demographer in 1962 which is an improvement over Hajnal's method of estimating

mean age at first. The method utilizes the data on proportion of single from two successive censuses unlike the Hajnal's method that is completely based on the first marriage experience during the inter-censal period. Due to the nature of data and simplicity in this study the census synthetic cohort method proposed by John Hajnal is used. According to Hajnal the formula to calculate SMAM is:

$$SMAM = 15 + \frac{\sum_{x=15}^{45} 5 \cdot {}_5S_x - 50 \cdot S_{50}}{(1 - S_{50})}$$

Where, SMAM denoted Singulate mean age marriage.

${}_5S_x$  = Proportion of single in the 5-year age group.

$S_{50}$  = Proportion of single at exact age 50 and;

$S_{50}$  is computed by taking the average of  ${}_5S_{45}$  and  ${}_5S_{40}$ .

Figure 4.2 shows an average rise in the age first marriage of women in the reproductive ages during the successive periods between 1978 and 2009. SMAM of women in Addis Ababa has increased from 20.9 in 1978 to 29.3 in 2009, i.e., a rise of 9.4 years except 1995 UAAFS. This slight distortion might be due to the exclusion of special enumeration areas and collective quarters such as hotels and hostels that are expected to be occupied by high proportion of single women (CSA, 1997).

Table 4.2. Illustration for computation of women SMAM by Hajnal's method using survey data of Addis Ababa in 2009.

Age group (in years)	Total sampled population	Never married women population	Proportion single female
(1)	(2)	(3)	(4)=(3)/(2)
15-19	166	162	0.9759
20-24	128	109	0.8516
25-29	94	55	0.5851
30-34	59	18	0.3051
35-39	43	4	0.0930
40-44	49	1	0.0204
45-49	49	0	0

Source: Survey data, 2009

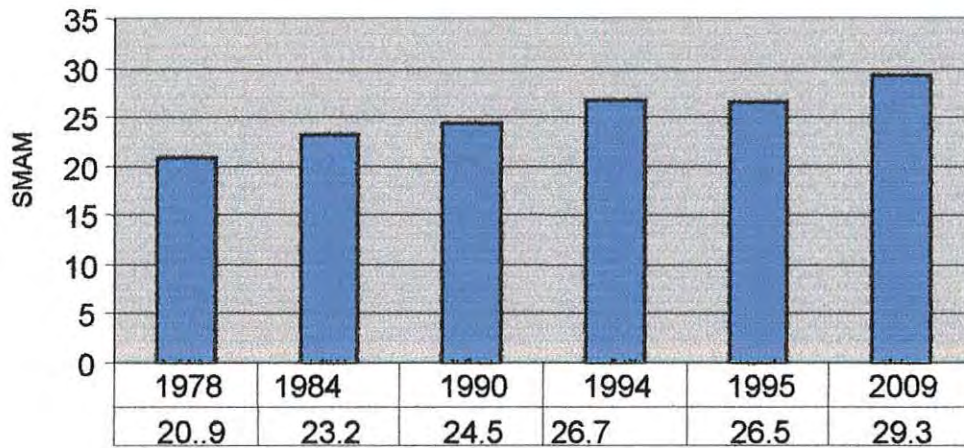
$$S_{50} = \frac{(0.0204 + 0)}{2} = 0.0102$$

$$SMAM = \frac{15 + 5(0.9759 + 0.8516 + 0.5851 + 0.3051 + 0.0930 + 0.0204) - 50(0.0102)}{1 - 0.0102} = 29.3$$

$$SMAM = 29.3$$

Figure 4.2 shows an average rise in the age first marriage of women in the reproductive ages during the successive periods between 1978 and 2009. SMAM of women in Addis Ababa has increased from 20.9 in 1978 to 29.3 in 2009, i.e., a rise of 9.4 years except 1995FSUAA. This slight distortion might be due to the exclusion of special enumeration areas and collective quarters such as hotels and hostels that are expected to be occupied by high proportion of single women (CSA, 1997).

Fig 4.1 Singulate Mean Age at Marriage for Women in Addis Ababa: 1978-2009



Source: 1978-1995(CSA, 1991) and computed by author from respective data set in 2009

## CHAPTER FIVE

### 5. DIFFERENTIAL AND DETERMINANTS OF AGE AT FIRST MARRIAGE

#### 5.1 Differentials of Age at First Marriage: Bivariate Analysis

Addis Ababa, as most capital cities, is characterized by the highest level of age at first marriage. This may be due to the better situation of the city in the share of the modern infrastructure .i.e. availability of education opportunities, and other alternatives such as work opportunities and the like are highly associated with higher age at first marriage. Though this fact explains the general situation of the area, variations existed among the diverse subgroups of the population. Due to the considerable differences in the socioeconomic conditions prevailing in the area, not all the population is advantageous (equally accessible) with respect to the above privileges of the city. Thus previous studies have noted substantial age at first marriage differentials among the diverse sub-populations of the city depending on the various socio-economic conditions (CSA, 1997 and Kinfu, 2001).

This section of the analysis is also essentially devoted to investigate the factors determining these differentials in the age at first marriage of Addis Ababa. Thus age at first marriage differentials will be studied using variables such as premarital educational level, educational status, work status, ethnicity, religion, birth cohort and parental educational status.

For the analysis survival mean and median age at first marriage and survival plots of age at first marriage based on data collected about each selected variables (see Table, 5.1 and Fig 5.1 to Fig 5.8)

Before reporting the differentials, it may be worthwhile to present the level of age at first marriage among women in Addis Ababa. Table 5.1 revealed that the mean and median age at first marriage of the females in the city is 28.5 and 25 years respectively.

**Table 5.1 Socio-economic Differentials of Survival Mean and Median Age at First Marriage of Women in Addis Ababa:2009**

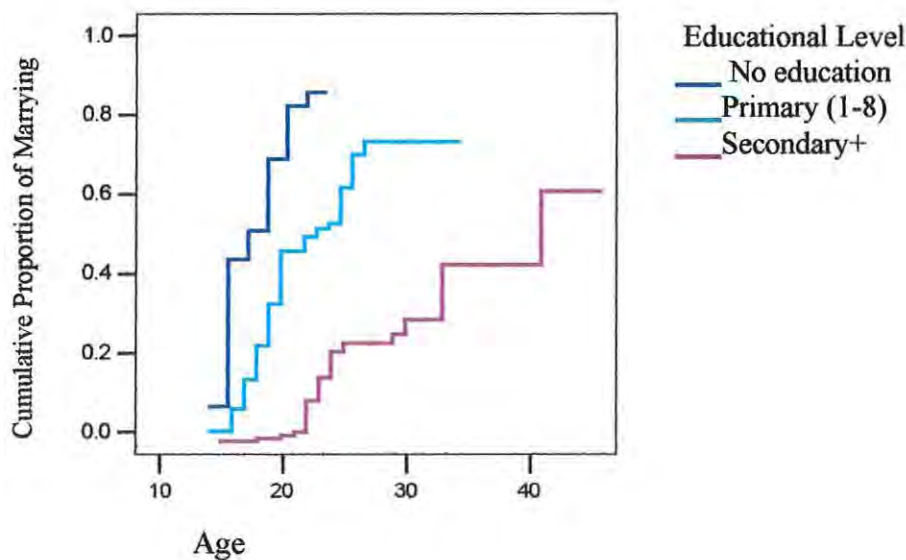
<i>Background Characteristics</i>	<i>Number of cases</i>	<i>Mean Age at first Marriage</i>	<i>Median Age at First Marriage</i>
<i>Educational Attainment</i>			
<i>No education</i>	123	17	16
<i>Primary</i>	161	25	25
<i>Secondary+</i>	314	26	40
<i>Enrollment</i>			
<i>Student</i>	309	34	40
<i>Not Student</i>	289	19	17
<i>Work Status</i>			
<i>Working</i>	127	33	26
<i>Not Working</i>	471	24	21
<i>Birth Cohort</i>			
1960-1969	111	17.6	15
1970-1979	99	24.2	20
After 1980	388	33.5	32
<i>Religion</i>			
<i>Christian</i>	444	32	32
<i>Muslim</i>	154	18	17
<i>Ethnicity</i>			
<i>Amhara</i>	253	19	18
<i>Oromo</i>	161	30.8	26
<i>Other</i>	184	30.5	25
<i>Father education</i>			
<i>No education</i>	124	17.5	16
<i>Primary</i>	186	22.2	20
<i>Secondary+</i>	288	36	40
<i>Mother Education</i>			
<i>No education</i>	196	20	17
<i>Primary</i>	265	25	26
<i>Secondary+</i>	137	38	40
<i>Over all</i>	598	28.5	25

*Source: Survey Data 2009*

The mean and median age at first marriage was examined for some background variables (see Table 5.1). The variation in mean and median age at first marriage was observed among women

of different educational categories. Women who attained secondary and higher level of education marry on average at much higher ages (26 years) compared to those who have had no education(17 years). Similarly, the median age at first marriage of women with secondary and higher educational level (40 years) is higher than women with no education (16 years).

Fig 5.1 Survival Plot of Age at First Marriage of Women in Addis Ababa by Educational Level: 2009



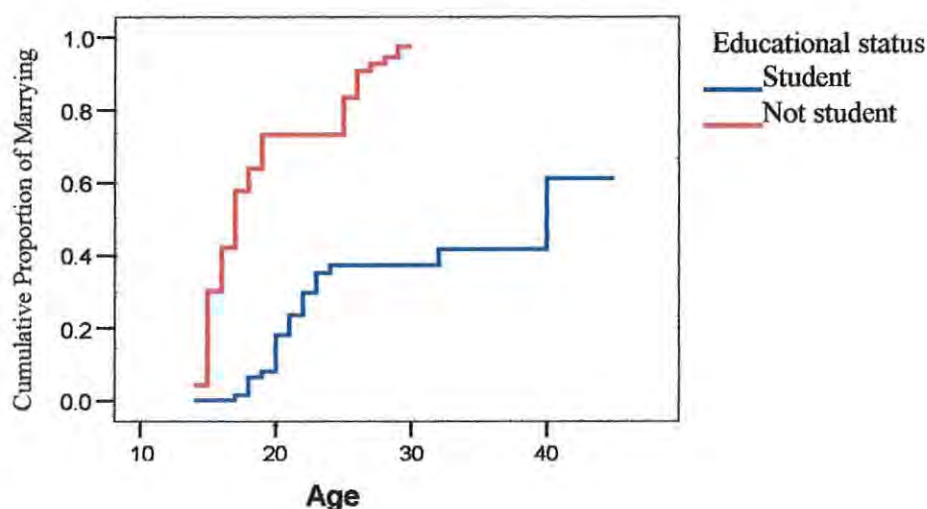
Source: Survey data, 2009

In Fig 5.1, the author further explored the association using the cumulative proportions of women experiencing the first marriage at specified ages. So, there is ample evidence that the cumulative proportion attaining the first marriage was highest among the women with no education, then followed by women with primary education and finally by that for women with at least secondary education. For example, at age 20, around 70 percent women with no education were already married compared to around 40 percent with (women with primary education) and only less than 1 percent women married with at least secondary educational level.

Educational enrollment, which represents the individual's educational participation at the time of a life event rather than the highest level of education achieved, also revealed that there was some

variation in the mean and median age at first marriage. For example, woman who was enrolled in school or college six month before age at first marriage or survey date marries on average in 34 years compared to their counter parts (19 years). Similarly, the median age at first marriage of women with attending school or college was higher (40 years) as compared to their counterparts (17years).

Fig 5.2 Survival Plot of Age at First Marriage of Women in Addis Ababa by Educational Status: 2009



Source: Survey data, 2009

As indicated in Fig 5.2, there is also strong evidence that the cumulative proportion attaining the first marriage was highest among women who were not enrolled in school or college with in six month before the survey or first marriage than their counterparts. For instance, at age 20 more than 70 percent of women, who were not enrolled in school or college with in six month before survey or time of marriage, were married, compared to about only 10 percent by their counterparts.

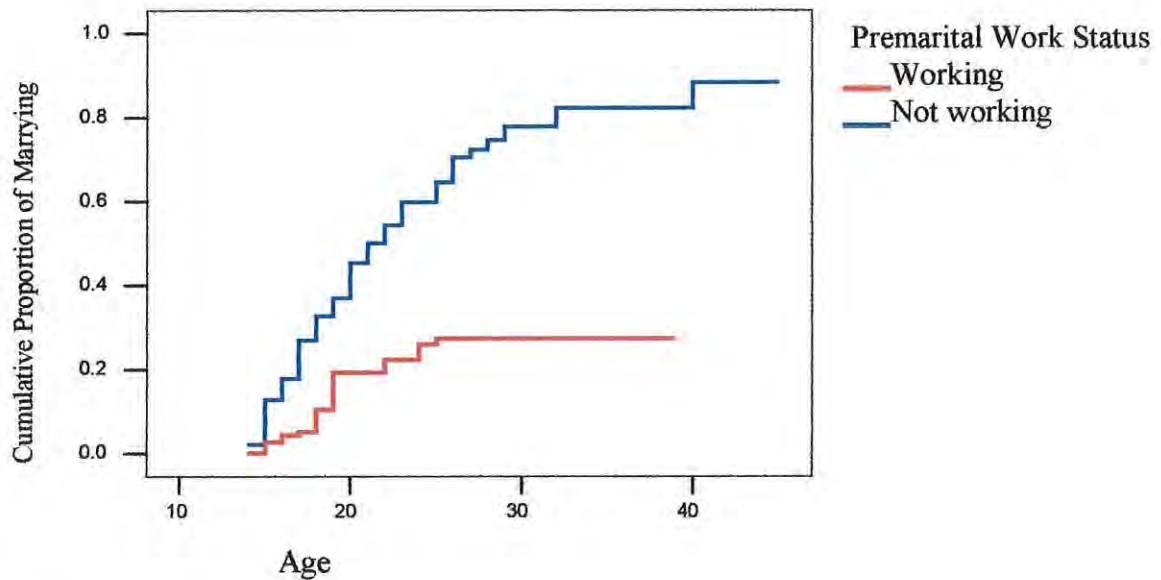
Table 5.1 also shows the differentials in the age at first marriage by work status of the respondents. Female labour force participation is another socio-economic characteristic whose link with age at first marriage has received considerable attention in the literature. The basis for investigating the relationship between age at first marriage and labour force participation is partly

rooted in the general observation that certain types of employment, particularly in the modern sector of economy, required long term institutionalized training (Singh and Renee, 1996).

For this reason, women employed in the modern sector of the economy or preparing themselves for such positions are more likely to get married late than non-working women who may have been married at an earlier age. As it is clear from the figure presented in Table 5.1, in Addis Ababa, not working women exhibit the lowest average age at first marriage, compared to working women. For example, the mean and median age at first marriage for women who were working at the time of survey or marriage is lower (33 and 26 years,) than women who were not working (24 & 21 years) mean and median age first marriage respectively.

Fig 5.3 also further explored the association of working status and age at first marriage by using the cumulative proportions of women experience the first marriage at specified ages. There is additional evidence that the cumulative proportion attaining the first marriage was highest among women who have not engaged in any kind of work (who were depend upon some one else or their parents to earn their living) than their counter parts. For example, at age 20 years, around 45 percent of women who were not engaged in any gainful work had already had their first marriage compared to only 20 percent among women who were engaged in gainful work.

Fig 5.3 Survival Plot of Age at First Marriage of women in Addis Ababa by Premarital Work Status: 2009

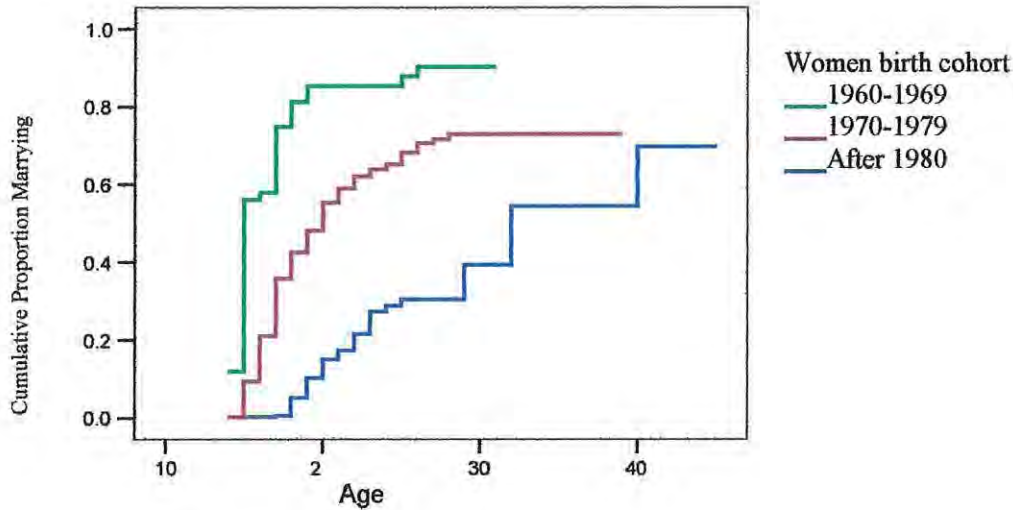


Source: Own survey data, 2009

Birth cohort is included as a proxy for the likely normative environment in which women grew up as well as macro structural changes which shaped women's economic opportunity structure. The mean and median age at first marriage among women born between 1960 and 1969 was 17.6 and 15 years compared to women born between 1970 and 1979 with mean and media 24.2 and 20 years respectively. The highest mean (33.5 years) and median (32 years) age at first marriage is among women born after 1980s.

Similarly, as indicated in Fig 5.4, there is ample evidence that the yearly chance of first marriage is lower among the younger cohorts. It has also been shown that women born prior to the 1980 have higher yearly risks of marrying for the first time, while those born to wards the end of 1980s and then after have lower yearly risks. Women belonging to the birth cohort of 1960s marrying for first time earlier than their immediate flowers same trend is also observed for others when compared to their immediate younger age cohorts. So the chance of marrying for first time progressively declined among the younger age cohorts.

Fig 5.4 Survival Plot of Age at First Marriage of Women in Addis Ababa by birth Cohort in 2009

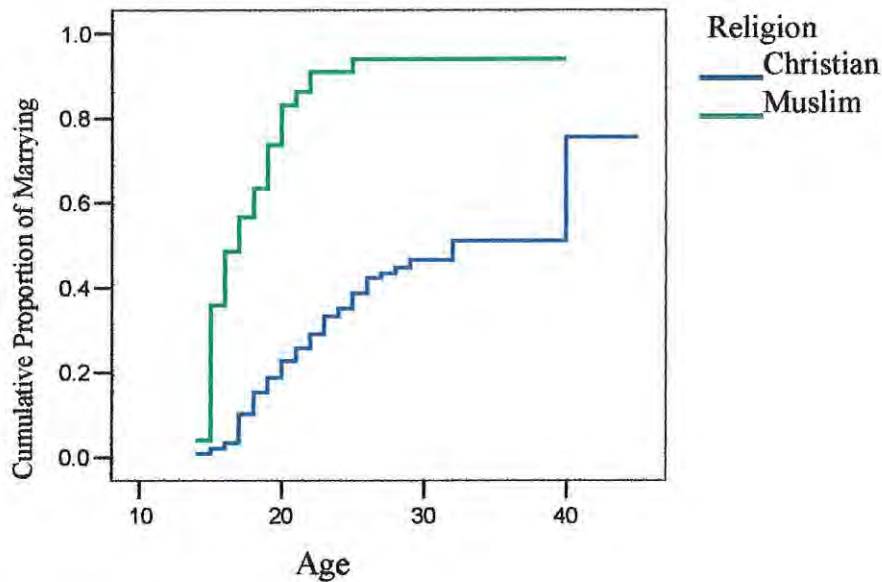


Source: survey data 2009

The data shown in Table 5.1 also revealed that religions differentials in age at first marriage in the city. As can be seen from table, the lowest mean (18 years) and median (17 years) of age at first marriage in city was observed among Muslim as compared to “Christian” (includes 62.2% Orthodox and 12% Protestant) with 32 and 32 years mean and median age at first marriage respectively.

According to Fig 5.5 there is also ample evidence that the cumulative proportion attaining the first marriage was highest among Muslim women than Christian category. For example, at exact age 20 years, around 90 percent of Muslim women were already married compared to only around 25 percent among Christian women.

Fig 5.5 Survival Plot of Age at First Marriage of Women in Addis Ababa by Religious Affiliation: 2009.

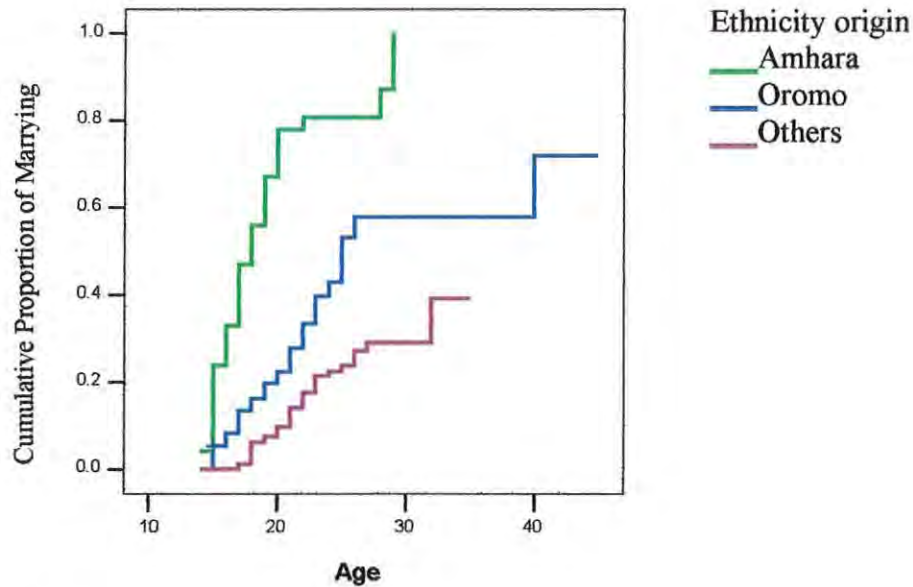


Source: Survey data, 2009

Once again, as in the case of ethnicity, the data presented in Table 5.1 shows a clear evidence of variations of age at first marriage by ethnic origin of the women. For instance, mean and median age at first marriage in city was highest among Oromo (30.8 and 26 years) than ‘Other’ category (30.5 and 25 years) and followed by Amhara (19 and 18 years) respectively.

Similarly, Fig 5.6 further explored the association using the cumulative proportion of women experiencing the first marriage at specified ages. There is strong evidence that the cumulative proportion attaining the first marriage was highest among Amahara women than ‘Others’ category and followed by Oromo ethnic origin. For instance, at exact age 20 years, around more than 70 percent of women with Amhara ethnic origin were already married compared to only around 20 percent and followed by only 10 percent among women with ‘Other’ and Oromo ethnic origin respectively. So women with Amhara ethnic origin were married earlier than “Other” ethnic category and women with Oromo ethnic group.

Fig 5.6 Survival plot of Age at First Marriage of Women in Addis Ababa by Ethnic origin: 2009



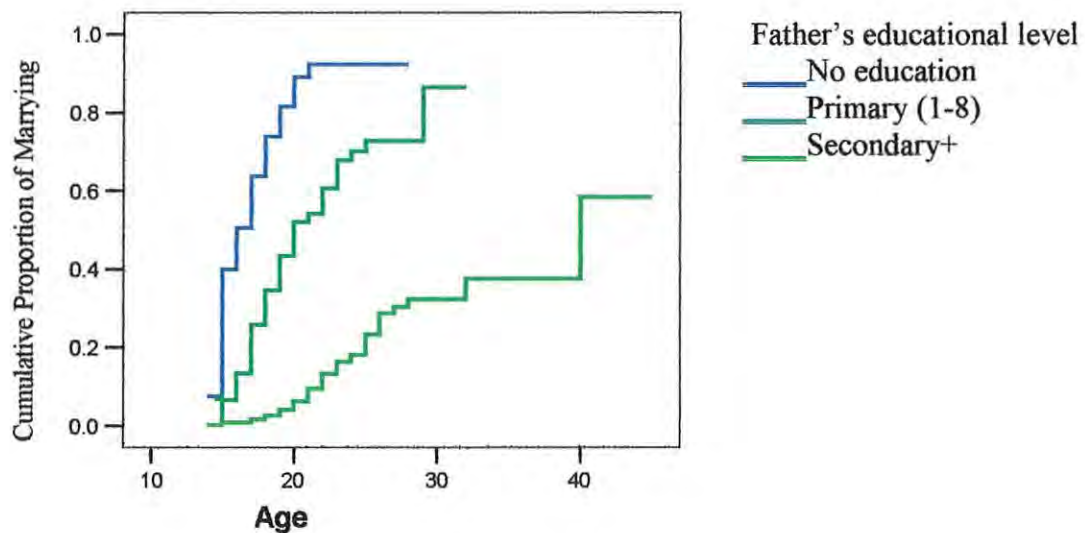
Source: Survey data, 2009

There was also a substantial variation in mean and median age at first marriage of women by educational status of father and mother. Parental educational level is affecting the timing of first marriage of their daughter through, their educational expectation. This in turn prolongs the time spent in school by women. So, a daughter with illiterate fathers and mothers enters in to first marriage earlier than those with primary education and followed by secondary and higher education. For example, the mean and median age at first marriage of daughter with illiterate mother is 20 and 17 years as compared to a daughter with secondary and higher education mother ( 38 and 40 years ) respectively.

In Fig 5.7, author farther tried to explore the association using the cumulative proportions of women experiencing the first marriage at specified ages. It shows ample evidence that, the cumulative proportion of experiencing the first marriage was highest among women with illiterate father compared to women whose father education is primary level followed by women whose father educational level is at least secondary school. For example, at exact age 20 years, around 90 percent women whose illiterate father were married compared to about 40

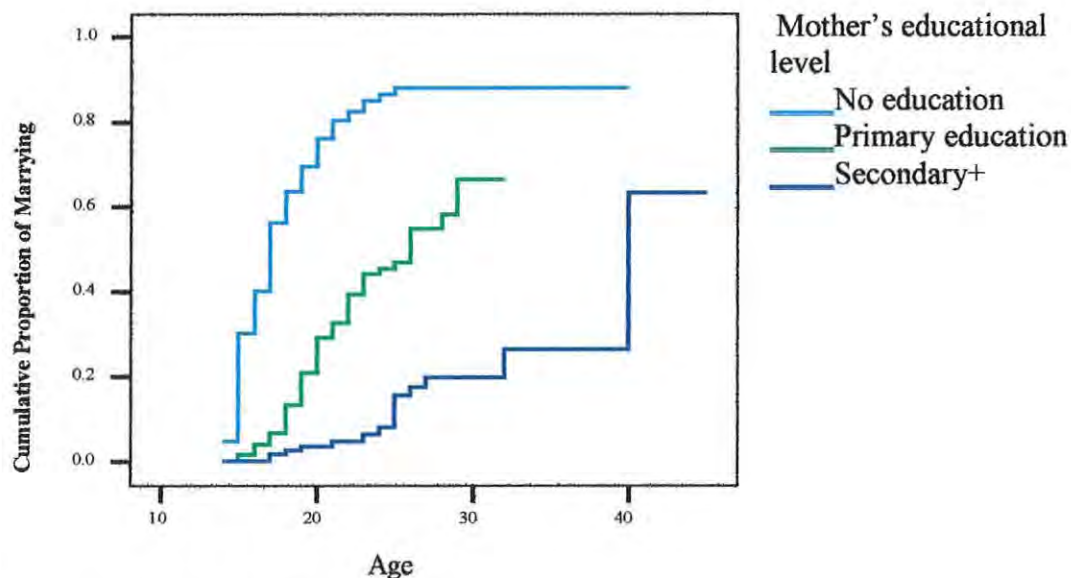
percent women whose father with primary education and followed by only around 5 percent of women born from father with at least secondary school level.

Fig 5.7 Survival Plot of Age at First Marriage of Women in Addis Ababa by Father's Educational Level: 2009



Similarly, Fig 5.8 further confirmed the association between mother education and age at first marriage by using the cumulative proportions of women experiencing the first marriage at specified ages. For instance, at exact age 20 years, about more than 80 percent women with illiterate mother were already married compared to about 35 percent among women whose mother with primary education and followed by only about 10 percent of women whose mother with at least secondary school.

Fig 5.8 Survival Plot of Age at First Marriage of Women in Addis Ababa by Mother's Educational Level: 2009



Source: Own survey data, 2009

## 5.2 Determinants of Age at First Marriage: A multivariate analysis

While the univariate and bivariate analysis discussed above is very useful in providing a general picture about the relationship between socio-economic status and the pattern of age at marriage, the effects of socio-economic and other factors on the pattern of age at marriage are complex and should be studied using multivariate methods.

As indicated in section 2.9 Cox regression model is more appropriate than ordinary regression model. This is due to the dependent variable of interest (survival time) is most likely not normally distributed that leads to a serious violation of an assumption for ordinary least squares multiple regression and there is also the problem of censoring, that is, some observations will be incomplete (Allison, 1984). So the Cox regression model is the appropriate method of analysis used in this study due to the nature of data used.

In the study, the proportionality assumption of the model was examined statistically by plotting log minus log (LML) on the survival time and it was not violated (see appendix 4).

### Testing Multicollinearity Effect

Multicollinearity is the intercorrelation of independent variables. There are different ways of testing (diagnosis) the intercorrelation between independent variables. But in this study coefficient of contingency table which was formulated by Yule's was used. The coefficient is given as (Kathari, 1990:205).

$$C = \frac{\sqrt{\chi^2}}{\sqrt{\chi^2 + N}} \quad \text{Where, } C = \text{Coefficient of contingency}$$

$$N = \text{Number of sample}$$

The value of this coefficient will be some where between +1 and -1. If the variables are completely associated (perfect positive association), with each other, the coefficient will be +, and if they are completely disassociated (perfect negative association), the coefficient will be -1. If the associations are completely independent of each other, the coefficient of association will be 0. In this study, multicollinearity diagnosis shows weak relationships between the predictor variables with a maximum value of 0.28, so the multicollinearity is not the problem in this study (see appendix five).

Table 5.2 displays the proportional hazard coefficients ( $\beta$ ) and the associated relative risks  $e^{(\beta)}$  of first marriage in Addis Ababa. Similarly as indicated under methodology section,  $e^{(\beta)}$  represents the relative risk of first marriage associated with each covariate relative to the risk for the reference or base line category. The relative risk for the base category of each factor is unity ( $e^{(0)} = 1$ ), thus a coefficient of 1.00 for any of the other categories indicates that the variable category in question has the same effect as for the reference or base line group on the timing of first marriage. A value of  $e^{(\beta)}$  higher than one indicates greater risk of first marriage than the base line category, whereas values less than unity indicate a lower relative risk.

### 5.2.1 Results of Multivariate Analysis

To see the factors that affect the age at first marriage among women in Addis Ababa, eight independent variables and two other control variables were entered in to the model. Of these, only father educational level has not net effect on the age at first marriage among women in the study area. The results obtained by fitting the Cox regression model are presented in Table 5.2.

Table 5.2 Coefficients and Relative Risks of First Marriage of Women from Cox Proportional Model, Addis Ababa, 2009

Variable/ category	Regression Coefficients ( $\beta$ )	Relative risk $e^{\beta}$	S.E
Educational level (base=No education)			
Primary (1-8)	-.843*	.431	.202
Secondary+	-1.260*	.284	.199
Educational enrolment (base= no student)			
Student	-.721*	.486	.176
Working status (base= not working)			
Working	1.157*	.314	.292
Birth cohort (base= 1960-1969)			
1970-1979	-.362	.696	.172
After 1980	-1.989*	.137	.197
Religion (base= Christians)			
Muslim	.512*	1.669	.145
Ethnic Origin (base= Amhara)			
Oromo	-1.004*	.367	.218
Others	-.415*	.660	.192
Father education (base= primary)			
No education	.451	1.570	.246
Secondary+	1.563	.756	.215
Mother education (base= primary)			
No education	.462*	1.587	.195
Secondary+	-.822*	.439	.322
-2 Log likelihood			2701.4
(P-value)			0.00
Model $\chi^2$			868.98
Number of cases			598

Source: Computed by writer from the respective data sets  
\*statistically significant at 0.05 level

### **Educational attainment**

Premarital educational attainment is highly significant and indicates an inverse relationship with the relative risk of the first marriage (Table 5.2). The result of the table clearly shows that net of other factors, primary (1-8) education tends to reduce the likelihood of the first marriage by about 57 percent [ $100-(1-0.431)$ ], while secondary and above education depresses the likelihood of marriage approximately by 72 percent [ $100-(1-0.284)$ ]. In other words, an increase in the educational level of the respondents reduces the relative risk of getting married early.

### **Educational enrollment**

Education enrollment, was also found to be significantly related to the likelihood of first marriage among women in Addis Ababa ( $P<0.05$ ). The result of the table clearly revealed that net of other factors, students tends to reduce the chance of first marriage by about 52 percent [ $100-(1-0.486)$ ] as compared to their counterparts. This obviously indicates that being student it self contributes much to rise of age at first marriage as compared to women who did not attending school.

### **Premarital work status**

Premarital work status of the women was found to be statistically significant with the likelihood of entering into the first marriage (Table, 5.2). Women who have engaged in any gainful work to earn their living were observed as lower relative risk of first marriage than women who have not engaged in any gainful work (i.e. who were depend up on some one else. Net of the effects of other factors, women who have engaged in any gainful work reduce the risk of first marriage by about 69 percent [ $100-(1-0.314)$ ]. This clearly vivid that, participating in any gainful work contributes much to the rising of age at first marriage among women in Addis Ababa.

### **Birth Cohort**

Women birth cohort has a statistically significant effect on the likelihood of first marriage (Table 5.2). The results of the table 5.2 revealed that net of other factor women who born between 1970 and 1979 had reduced the chance of first marriage by almost 31 percent [ $100-(1-0.696)$ ] than women born between 1960 and 1969 (reference category). Similarly, women born after 1980 had reduced the chance of the first marriage by almost 87 percent [ $100-(1-0.137)$ ].

### **Religious affiliation**

Religious affiliation also tends to have a significant effect on the likelihood of the first marriage (Table 5.2). Controlling for the effects of possible differences in other socio-economic and cultural factors shown in the model, followers of Islamic religion had about 66 percent  $[100 - (1 - 1.669 - 1)]$  higher chance of the first marriage than the reference category (Christians).

### **Ethnic origin**

Similarly, the chance of entering into first marriage is also significantly vary among women of different ethnic origin. Net of the effects of other socio-economic and cultural factors in the model, with Oromo and Other ethnic origin had reduced the likelihood of the first marriage by about 64 percent  $[100 - (1 - 0.367)]$  and 34 percent  $[100 - (1 - 0.66)]$  than women with Amhara ethnic origin respectively.

### **Parental educational level**

As regard to parental educational status mother educational level had statistically significant effect on the likelihood of entering into first marriage of their daughters, while father education is insignificant related to the likelihood of first marriage of their daughters ( $P < 0.05$ ) Table 5.2.

Controlling for the effects of possible differences in other socio-economic and cultural factor shown in the analysis, women with illiterate mother had increased the chance of entering into first marriage by about 59 percent  $[100 - (1 - 1.587 - 1)]$  than women with primary education (reference category). In contrast, women with secondary and higher educated mother had reduced the chance of entering into first marriage by about 57 percent  $[100 - (1 - 0.439)]$  in Addis Ababa. Except the educational level of father, all other variables included in the model showed a significant effect on the age at first marriage of the women in the study area irrespective of their magnitude and direction.

## CHAPTER SIX

### 6. DISCUSSION OF MAJOR FINDINGS

#### 6.1 Discussion of Major Findings,

##### **Evidence for effect of women education on the age at first marriage**

Many research works by different scholars in different parts of the world (Singh and Renee, 1996; Becker, 1981; Naruman, 2001; Ikamari, 2005 and Mensch et al, 2005) and in Ethiopia (Abeje, 1995 and Haile, 1999) confirms the negative relationship between women educational level and the likelihood of first marriage. The result of this study also shows that there is an inverse relationship between educational level and the timing of first marriage among women in Addis Ababa and thus confirming the stated hypothesis of the relationship between the two variables.

As explained by New Home Economics theory and other related studies, the explanation for this association may revolve around the following facts: (1) effect of education on age at first marriage may operate through the labour market opportunities that education brings to women; (2) educational level raises women's aspirations about what constitutes a suitable match, if such expectations are not met, women may also tend to postpone marriage until they find a suitable match; (3) it may attribute through the effective use of the contraceptive. This effective use of contraceptive enables them to avoid unplanned pregnancy and unwanted pregnancy that may compel them to enter into marriage earlier than desired (NCPOD, et al, 1999 as cited in Ikamari, 2005). In this regard, a 25 years old, never married woman, college graduate woman explained how educational level reduced the importance of marriage for women and delay age at first marriage. She said:

*"I would like to get married some day and have my own family, but if that does not happen, it does not mean that I won't still be a productive member of society. Education equips me with knowledge and economic independent that made me to lead my life without marriage."*

**Women who attending school or college have less likelihood of entering into first marriage at all or quite early**

Consistence with Carrier Entry theory and other related findings, there is a negative effect of educational enrollment (institutional effect) on the age at first marriage of women in Addis Ababa. Similarly, findings were also documented in different parts of the world at different period of time (Katus et al, 2007 and Thomson, 2007).

As explained by Carrier Entry theory and other findings the association between these variables may operate through the following logical thinking: (1) since completing at least high school education takes time and takes an individual well past the traditional (early marriage) a delay in marriage could occur simply by being in school; (2) people in school or those who are still attending class in school still be considered “young” even if they are in their late teens or early twenties( Sundaram, 2006); (3) when women enrolled in school or college it is neither desirable nor feasible for students to marry as it is disruptive and generally young people lack the financial resource and the prospect of a stable income that would be ideal for marriage and forming a family (Oppenheimer, 1988 and Dixon, 1971). In this regard, a 23 unmarried and college student had described in her words how being a student delays age at first marriage. She said:

*“At the moment I do not want to form a family before completing my study, because for one thing, I don't want to share my time to cook and to give care for my partner and child instead of concentrating on my study. In addition to this,, I need my own income before marriage in order to establish more stable family rather than being dependent upon my husband's income, which is not good for women morally and economically.”*

**Premarital work status has the potential to postpone the timing of marriage among females.**

Different researchers (Singh and Renee, 1996; Katus, et al 2007; Mensch et al, 2005 Abeje, 1995) confirmed the negative relationship between women premarital work status and age at first marriage. The results of this study also showed that there is an inverse relationship between premarital work status and the likelihood of entering into the first marriage and thus confirming the stated hypothesis in the relationship between the two variables. As explained by New Home Economic theory the explanation behind the relationship between the premarital women work

status and age at first marriage is as follows: (1) Employment may provide the economic independence (resource) to women to postpone marriage i.e. when women are working they are financially independent and not need a man to take care of them, which contradicts the Career Entry theory that states the economic independent of the women facilitate rather than delay age at first marriage; and (2) work experience particularly in the formal sector, exposes women to new ideas and norms that discourage early marriage. In line with this explanation, a 25 years old unmarried working woman had described, in her own words, how premarital work related to female age at first marriage. She said:

*“If a girl is economically dependent on her parents or others, she is more likely to give a positive answer for a man who asked her for marriage than economically independent girl. This is because she doesn't have other alternative apart from accepting the marriage proposal in order to attain her economic needs. Unlike this, a girl who is working has no or little economic problem that forces her to form a union. In addition, working woman is more likely to expose her self to the new ideas that reduces early marriage than their counterparts. For similar reasons, I don't want to marry before the next two years. ”*

**Evidence on the effect of birth cohort on female's age at first marriage:**

Different research findings (Tsutsui, 2008; Abeje, 1995 and Kinfu, 2001) revealed that birth cohort affects age at first marriage among females. This study also confirms the hypothesis that women of older birth cohorts marry earlier than women that belongs to younger birth cohort. The logic behind may be partly attributed to the broader socio-economic change affecting all sectors of the population. The change in the status and aspirations of women also has contributed to this variation. In line with this explanation a 45 years old woman married at age 15 had described, in her own words, how birth cohort affect age at first marriage. She said:

*"In the past there were definite pressures on women in our society to get married. If the girl is not married at a certain age, say at about 16, people tend to feel sorry about her that make her to think there is something wrong with her and forces her to be married. For instance, I got married when I was 15. I think that this is changed completely in the city because women are now do not want to marry till they complete their education and become financially independent. Additionally, the attitude of the parents has also been changed. Now days parents think that their daughter's marriage is her own business than their own major concern. It is not something that parents arrange for them like what it used to be."*

### **Religion and Ethnicity are also affecting age at first marriage among girls**

In line with other findings, the chance of first marriage among women of different religious affiliation and ethnic origin also vary. According to the findings of the current study women with Oromo ethnic origin had the lower risks of age at first marriage than Amhara (reference category) and followed by women in "Other" category. Muslim women had higher risk of first marriage when compared to their counterparts i.e. Christian. This variation may be partially attributed to the variation in marriage norm and gender role. The response of in-depth interview from a 17 years old girl who has married at 16 years and Muslim religion follower describe the significant variation of age at first marriage between the followers of different religion. She said:

*"I have got married early (when I was 16 years old) because of my religion (being the follower of Muslim) because, Muslim doctrine is encouraging a girl to marry relatively at earlier age than other religion doctrine."*

### **Women born to educated mother marry late.**

Mother education tends to have a negative significant effect on the risk of first marriage of their daughter. This finding is supported by different study documented in different parts of the world at different period of time (Feedman et al 2003; Niu, 2000; Quisumbing and Kelly, 2003 and Thomson&Eva, 2007). This may be partially attributed to the thinking that educated women delay the end of their daughter's educational careers.

Similarly, the response of in-depth interview from a 25 years old unmarried, third year college students and born from educated mother explained the effect of mother education on the age at first marriage of their daughters. She said:

*"I support the saying: educating women is educating all family members. Because, she is my mother that encourage me to continue my further education that in turn encourage me to give much attention to my study than marriage till now. "*

The none significance of the father educational level on age at first marriage of their daughter, nonetheless, is probably due to presence of relatively less contact with their daughter rather than the contact they made with their mother.

## CHAPTER SEVEN

### SUMMARY, CONCLUSION AND RECOMMENDATION

#### 7.1 Summary

This study attempted to examine the trends and socio-economic and demographic determinants of age at first marriage among women in Addis Ababa. The study is largely based on the primary data generated through conducting a household sample survey with structured questionnaire to collect a retrospective event history data pertaining to essential background and age at first marriage of the respondents. In-depth interview of key informants was also used to substantiate the information obtained from the structured questionnaires.

In an attempt to identify and examine the major factors contributing to rise age at first marriage among women, two different theories and other related findings were discussed. Based on these theories and different findings eight predictors; namely, premarital educational attainment, educational enrollment, premarital work status, birth cohort, ethnic origin, religion and parental educational level (father's and mother's educational level) were included in the analysis.

The respondents to the survey are identified based on the household list in the enumeration areas (EAs) conducted by Central Statistical Authority (CSA) in 2007. In this case multi stage sampling technique was used. First, three Sub-cities were randomly selected and three kebeles i.e. one from each sub-city again selected randomly. From the three selected kebeles, the list of household in each enumeration areas (EAs) in respective kebeles were used as framework and a total of 598 women in the reproductive age group were identified proportionally. This is with the reasonable assumption that there is one eligible respondent (i.e. woman continuously living in Addis Ababa since age 12 or birth among those aged 15 and 49 years) regardless of their marital status.

With regards to the background information of the respondents, age distribution was predominantly young population and shows successive decreasing pattern as age increases. As to marital status 60% of the sampled women haven't yet married while, the remaining 40 percent

have been married some time in the past. With regards to educational level of respondents 20.5 percent of them had no education whereas the remaining 79.5 percent had some education ranging from primary to higher level. Slightly over half (52%) of the respondents were students with in six month before the survey date or first marriage and the remaining 48 percent were not attending school. Nearly eighty percent of the respondents were not engaged into any gainful work before marriage and the rest 20 percent were working. The majority of the respondents were Amhara (58 %), followed by Oromo (35 %), Gurage (5%) and Tigire (2 %). As to religion of the respondents the majority of the respondents were Orthodox (62.2%) followed by Protestant (12 %) and Muslim (25.8%).

The data revealed that 21 %, 31 % and 48 % of respondents' fathers have no education, primary and secondary and higher education, respectively. Similarly, the data showed that 33 %, 44 % and 23 % of respondents' mothers have no education, primary and secondary and above, respectively.

According to the results of the current study, Addis Ababa is best characterized by a steady rise in proportion of single females and singulate mean age at first marriage (Table 4.1 and Fig 4.1). The proportion of never married women in the reproductive age group increased from 53 percent in 1995 to approximately to well over 60 percent in 2009. These changes were caused primarily by an increase in the proportion of never married persons among the youngsters.

Similarly, the values of SMAM demonstrate that there is a profound change in the timing of women's marriage in Addis Ababa. The singulate mean age at marriage in Addis Ababa among female increases by about 3 years between 1995 (26.5 years) to 2009 (29.3 years). There is a dramatic change of female literacy rate and female labour work participation in the city which may be partially the main driving force behind alarming rise of age at first marriage in the study area (Table 3.1 and Table 3.2.).

The differential in age at first marriage has also been analyzed in relation to different socio-economic and demographic variables using bivariate analysis (survival plot). The mean and median age at first marriage among women with secondary and higher is enormously higher (26

and 40 years) as compared to women with primary (25, 25 years) and no education (17 and 16 years), respectively. A pronounced rise of age at first marriage was observed as the women advances in education. High mean and median age at first marriage (34 and 40 years) was observed for women who attained school than those never been to school (19 and 17 years). As to premarital work status, higher mean and median age at first marriage (33 and 26 years) was observed for working women than the non-working (24 and 21 years). The mean and median age at first marriage among women born after 1980 was higher (33.5 and 32 years) as compared to women born between 1970 and 1979( 24.2 and 20 years) and followed by women born between 1960 and 1969(17.6 and 15 years). Highest mean age at first marriage was observed among Christian (32 and 32 years) compared to Muslim (18 and 17 years). Mean and median age at first marriage in the city was highest among Oromo (30.8 and 26 years) followed by “Other” (30.5 and 25 years) and Amhara (19 and 18 years).

As to father’s education, mean and median age at first marriage of women born from at least secondary educational level father was the highest (36 and 40 years) as compared to women born from primary educational father (22.2 and 20 years) and women born from illtrate fathers(17.5 and 16 years), respectively. Similarly, the mean and median age at first marriage of women born from at least secondary educational level mothers was the highest (38 and 40 years) and followed by women born from mother with primary educational level (25 and 26 years) and women born from mother with no education (20 and 17 years).

The result of Cox regression model analysis (multivariate) showed that educational attainment has a significant and negative relationship with the relative risk of first marriage. As to educational enrollment, being student reduced the relative risk of entering into the first marriage than not enrolled in school. The likelihood of first marriage is also higher for non-working women than those in the working category. Birth cohort of the women was highly related to the chance of entering into first marriage, older birth cohort have had higher chances of entering into the first marriage than those born earlier. Women that belong to Amhara ethnic group and followers of Islamic religion had higher risk of first marriage as compared to their counterparts. Parental education, especially mother education tends to have a significant negative effect on the relative risk of the first marriage of their daughter.

In general, most of socio-economic and demographic variables considered in the multivariate analysis seem to show their impact on the dependent variable (chance of the occurrence of the first marriage) in the expected direction, as confirmed in most recent research works.

## **6.2. Conclusion**

The decline of fertility below replacement level and the line share contribution of rising of age at first marriage for its reduction have been well established and documented (Kinfu, 2001; Abeje, 1995 and Haile, 1999). However, recent information about trends and determinants of age at first marriage were not well documented among women in Addis Ababa.

This study identifies different, cultural, demographic, and socio-economic determinants in addition to assessing the trends and levels of age at first marriage among women in the study area. The effect of education as human capital and institution, work status, parental educational level, birth cohort, religion and ethnic origin was already investigated. This study, therefore, drives the following conclusions based on its investigation.

1. Under the impact of socio-economic changes during last few decades, the pattern of age at first marriage in Addis Ababa have been transformed from traditional to modern context, i.e. age at first marriage has increased significantly over the last few decades.
2. Women educational level, attending school, premarital work status, birth cohort and mother's educational level are key factors in shaping the new patterns of women's age at first marriage in the city.

Finally, all the variables selected had a significant effect on the age at first marriage of women in Addis Ababa irrespective of direction and magnitude except father education.

### **6.3 Recommendation**

Based on the findings indicated above, the following recommendations were forwarded:

1. Although, women's age at first marriage in city has increased significantly over the last few decades, still there are few women (20.5%) with no education married less than 18 years, which is early according to Ethiopia Family Law. So the program and policy should improve the educational attainment for disadvantaged group so as to rise their age at first marriage to the desired age.
2. According to this finding about 60 percent of the women in the reproductive age group are never married. The mean and median age at first marriage is also high (28.5 and 25 years) respectively. This shows that the trends of age at first marriage is still continued to rise in the city which in turn may be brings a new social, economic and health risks for women like premarital pregnancies, birth and unsafe abortion and HIV/AIDS. So further studies is recommended to understand those consequences of late marriage in the city.

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On Nov, 2008

**Appendix one**  
**Questionnaires Addis Ababa University School of Graduate,**  
**College of Development Studies**  
**Institute of Population Studies.**

Informed Consent

Dear Respondent!

This questionnaire is designed to collect data about the socio-economic and demographic determinants of women age at first marriage in Addis Ababa. You have been selected to complete the questionnaire as part of a sample of the study population. I would very much appreciate your participation in this study.

The data collection from this questionnaire will be used for the purpose of the research. Your genuine responses are very important in order to meet the purpose of the study. To this end, whatever information you will provide will be kept strictly confidential and will not be shown to other persons. Participation in this study is voluntary and you can choose not to answer any individual question over all of the questions. However, I hope that you will participate in this study

Do you have any question with regard to this study?

Do you agree to take part in this study?

1/ Yes (Continue)

2/ No (Thank You)

**Identification**

1. Sub-city.....
2. Kebele .....
3. House number .....
4. Name of house hold head name.....
5. Name of Respondents .....sign.....
6. Supervisors name.....sign.....
7. Date of interview...../...../ 2001



**Part II Questions for both married and never married women.**

Now the following questions are asked to collect some socio-economic and demographic Condition from all women age between 15 and 49 years starting from their age 12 to age at first marriage for married or to survey date for never married women.

NQ	Filters and questions	Code
201	How old are you?	_____ years old 98 ..... don't know
202	In what year and month were you born?	_____ years _____ months 98 ..... don't know
203	Have you ever married?	1..... yes 2..... No (skip to 207)
204	How old were you when you first started living with your first husband?	_____ years
205	In what month and year did you marry to first husband?	_____ month _____ year 98.....don't know
206	Who arranged your first marriage?	1..... your family 2..... friends 3..... my self 4.....abduction Others _____ (Specify)
207	Was your first marriage postponed due to shortage of money, education, and intervention of your family?	1..... yes 2 .....No(Skip to 209)
208	If your answer is yes which was the main reason for you?	1 .....shortage of money 2..... For competing my education 3..... By my families

209	<input type="checkbox"/> <b>For Married</b> What was your educational level when you were married to your first husband?	<input type="checkbox"/> <b>For never married</b> What is your educational level at this moment	1..... Illiterate (No education) 2..... Primary (1-8) 3..... Secondary (9-12) 4..... Higher (Vocational, College & University)
210	<input type="checkbox"/> <b>For married</b> Have you a student, when you were married to your first husband?	<input type="checkbox"/> <b>For never married</b> Are you a student, at this moment?	1..... Yes (skip to 213) 2..... No
211	<input type="checkbox"/> <b>For married</b> At what time you interrupted your education before marriage	<input type="checkbox"/> <b>For never married</b> At what time you interrupted your education from this time	1..... before 6 months 2..... not before 6 months
212	How did you leave school?		1..... unable to afford school fee 2..... Got married 3..... Got pregnant 4..... Poor family help 5..... Completed high school 6..... completed university 7..... fail Others _____ (Specify)

213	<input type="checkbox"/> <b>For married</b> What was your father's education at your first marriage?	<input type="checkbox"/> <b>For never married</b> What is your father's education at this moment?	1.....Illiterate (No education) 2..... Primary (1-8) 3..... Secondary (9-12) 4.....Higher (12+) 5. ....No father
214	<input type="checkbox"/> <b>For married</b> What was your mother's education at your first marriage?	<input type="checkbox"/> <b>For never married</b> What is your mother's education at this moment?	1.....No education 2..... Primary (1-8) 3..... Secondary (9-12) 4.....Higher (12+) 5. ....No mother
215	<input type="checkbox"/> <b>For married</b> During your first marriage on average, how much Birr your family earn per month?	<input type="checkbox"/> <b>For never married</b> At this moment on average, how much birr your family earn?	_____ Birr
216	<input type="checkbox"/> <b>For married</b> What was your religion, when you married to your first husband?	<input type="checkbox"/> <b>For never married</b> What is your religion at this moment?	1.....Orthodox 2..... Protestant 3..... Catholic 4.....Muslim Others _____ (Specify)

217	<input type="checkbox"/> <b>For married</b> Have you ever done any gainful work before your first marriage?	<input type="checkbox"/> <b>For never married</b> Have you ever done any gainful work before this time or at this time?	1.....Yes 2.....No(Skip to 221)
218	What type of work have you engaged in		1..... Trade 2..... Government employee 3..... Daily laborer domestic servant Others _____ (Specify)
219	Have you done this work for your family, or for your self?		1.....For family 2..... For Self Others _____ (Specify)
220	How much did you earn on average per month from this work?		_____ Birr
221	<input type="checkbox"/> <b>For married</b> Have you ever made sexual relation with opposite sex before marriage?	<input type="checkbox"/> <b>For never married</b> Have you ever made sexual relation with opposite sex before this time?	1.....Yes 2.....No (skip to 225)
222	How old were you when you had sexual intercourse for the very first time?		_____ years

223	<input type="checkbox"/> <b>For married women</b> Have you ever given birth to a child before your first marriage?	<input type="checkbox"/> <b>For never married women</b> Have you ever given birth to a child before this time?	1.....Yes 2.....No (skip to 123)
224	If yes how many of them were leaving with you, with other people or died?		_____ living with you _____ living else where _____ died Others _____ (Specify)
225	<input type="checkbox"/> <b>For married</b> How many siblings you were living with during your first marriage	<input type="checkbox"/> <b>For never married</b> How many siblings you are living with at this time?	1.....None 2.....One 3.....Two 4.....Three and above
226	What was your place of residence Before your age 12,		1..... Addis Ababa 2.....Other urban area 3.....Rural

### Part Three

Now some questions are asked only for never married women whose age between 15 and 49 years about their marriage plan and the like starting from their age 12 until survey date/ age at first marriage.

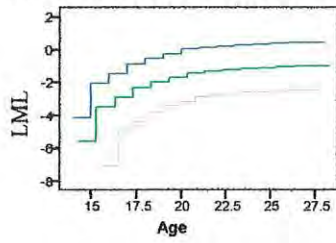
NQ	Filters and questions	Code
301	<p>Now I need to ask about the marriage plan and related question.</p> <p>Do you have any plan to marry in the future?</p>	<p>1..... Yes</p> <p>2..... No (skip to 303)</p> <p>98.....don't know(Skip to 305)</p>
302	<p>When do you plan to marry?</p>	<p>1.....In the next one year</p> <p>2.....In the next two years</p> <p>3.....After two years</p>
303	<p>Why you don't want to marry in the near future?</p>	<p>1..... I am helping my parent.</p> <p>2.....I want to live alone</p> <p>3..... I am searching for work</p> <p>4..... I am learning</p> <p>5..... I haven't get partner of my interest</p> <p>Other _____</p> <p>(Specify)</p>
304	<p>Would you please tell me the main reason?</p>	<p>Write Code</p>
305	<p>What is the advantage of being single without marriage?</p>	<p>1..... No advantage</p> <p>2. ....Freedom</p> <p>3. ....To enhance once own income</p> <p>4..... to get farther education</p> <p>5..... to help family</p> <p>Other _____</p> <p>(Specify)</p>
306	<p>In your opinion before entering to marriage, what are the things must be fulfilled?</p>	<p>1.....Private house and house furniture</p> <p>2..... Stable income/job</p> <p>Others _____</p> <p>(Specify)</p>



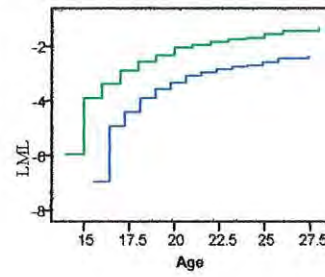
## Appendix V

Checking Proportional Hazard Assumption of each covariate based on LML, the lines are not cross each others. So the assumption of proportional Hazard is satisfied.

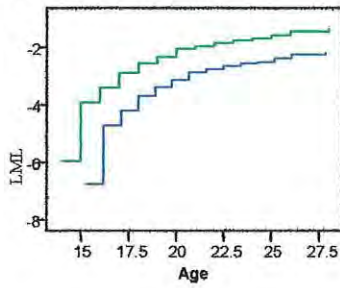
**LML Function for patterns for birth cohort**



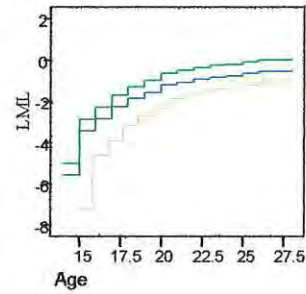
**LML Function for patterns for work status**



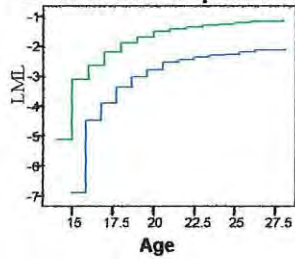
**LML Function for patterns for religion**



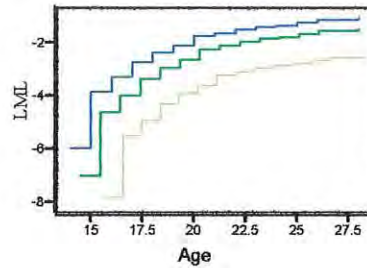
**LML Function for patterns educational level**



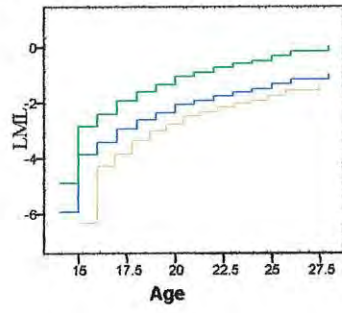
**LML Function for patterns educational Status**



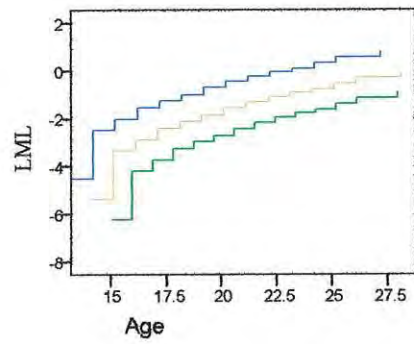
**LML Function for patterns for father education**



**LML Function for patterns mother education**



**LML Function for patterns for Ethnicity**



Appendix VI  
Coefficient of Contingency Table

	Educational level	Educational status	Work status	Ethnicity	Religion	Birth cohort	Father education	Mother education
Educational level	1							
Educational status	.259	1						
Work status	.273	.237	1					
Ethnicity	.176	.099	.06	1				
Religion	.273	.154	.098	.151	1			
Birth cohort	.36	.27	.163	.225	.237	1		
Father education	.28	.220	.072	.197	.267	.215	1	
Mother education	.278	.221	.092	.228	.213	.234	.280	1

**Declaration**

The thesis my work, has not been presented for a degree in any other university and that sources of material for thesis have been duly acknowledged.

A. Alemu Shiferaw

Student

[Signature]  
Signature

03/07/09

Date

It confirms that this has been submitted with my approval as the supervisor of the same.

Dr. Eshete Girma

Advisors

[Signature]  
Signature

03/07/09

Date