Determinants of Teenage Fertility in Coast Province:

Evidence from the 2008/9 Kenya Demographic and Health Survey (KDHS)

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DECLARATION

This research is my original work and to the best of my knowledge has not been presented for a degree in any other university.

Signature _____ Date _____

Jumbe W. Marline

This has been submitted for examination with my approval as a University Supervisor:

Signature_____ Date_____

Professor Walter Mwanda

DEDICATION

To the Lord God Almighty, whose love never fails; you are my all in all. To my parents the late Mr. Emanuel Jumbe and doting mother Mrs. Rabia Jumbe, brothers, sisters and friends; I cannot thank you enough for your support as I undertook my studies and research. My dear husband Martin Kumbe and daughters Cess and Alma thanks for your endless support and encouragement throughout the entire study period. To my cousin Gladys, this would not have been tenable without your tireless backing. You took good care of Cess and Alma so that I could pursue this enormous dream.To my classmate Elvis Kirui, your patience and tolerance has not gone unappreciated. Your support towards this is inestimable. To my mentor, Dr. George Odwe from the University of Nairobi's Population Studies and Research Institute (PSRI) many thanks for your guidance and forethought.

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ABSTRACT

Teenage fertility has been a major concern both nationally and globally. A better understanding, therefore, of its determinants to inform programmers, researchers and policy makers on how best to reverse the trends so as to meet the Millennium Development Goals (MDG) Number 1: To eradicate extreme poverty and hunger; Number 2: To achieve universal primary education; Number 3: To promote gender equality and empower women; Number 4: To reduce child mortality and Number 5: To improve maternal health will be useful. According to the Kenya Demographic and Health Survey (KDHS) 2008-9, 18% of young women age 15-19 had already began childbearing. In Coast Province, 26% of teenagers had either had a live birth or were pregnant with their first child at the time of the survey. This is the second highest national teenage fertility after Nyanza Province (27%) with the lowest being Central Province (10%).

As such, the objectives of this investigation is therefore to analyze the determinants of teenage childbearing in Coast Province while examining the socioeconomic, cultural, biological and behavioral factors influencing teenage fertility in this region.

247 respondents were eligible for this investigation. Bongaarts Fertility Framework (1984) was operationalized as it allows for identification of major pathways through which socioeconomic, cultural, biological and behavioral factors influence fertility.

Multivariate logistic regression was used. Descriptive statistics generated showed distribution of women in the 15-19 age category by their background characteristics. Cross-tabulations were used to show any significant relationships that exist between each of the various predictor variables on the outcome variable. To determine whether these associations are statistically significant, a Chi-square test was used to measure the dependence of the association. The Chi-square also showed if any two variables of cross tabulations were independent.

Bivariate analysis indicated that there was statistically significant relationship between years of schooling, religion, current marital status, age at first sex and current use of modern contraceptives. The risk of teenage childbearing varied quite significantly across the predictor variables and none had a statistically significant association with teenage fertility in the Coastal Region.

As such, there is need to for further research to bring out the drivers of high teenage fertility in Coast Province. A comparative study with Central Province will be key as it is almost a third of the teenage fertility in Coast.

CHAPTER 1: INTRODUCTION

1.1 Background Information

Fertility decline is due in part to delayed childbearing among younger and adolescent women. In developing countries like Kenya, teenage childbearing is often associated with social issues, including lower educational levels, higher rates of poverty and other poorer life outcomes in children of teenage mothers. Teenage pregnancy in developing countries is usually outside of marriage and carries social stigma in many communities and cultures. This study, therefore, looks into the determinants of teenage childbearing in the Kenyan Coast with a focus on the 15-19 age cohort who have either had a live birth or who are pregnant with their first child at the time of the survey.

Adolescent pregnancy has been increasingly perceived as a problem and the International Conferences on Population and Development (ICPD) have identified the adolescents as a distinct target group in need of comprehensive reproductive health programs and services. Some studies on this topic highlight the presence of unmet reproductive health needs of adolescents in different regions. Improving maternal health has been established as a key development priority among the Millennium Development Goals (MDGs), and upgrading reproductive and maternal health is usually associated with the eradication of inequality, poverty, the presence of health care programs and services devoted to girls' education. This study investigates different factors largely grouped under socioeconomic, cultural and biological and behavioral factors that affect fertility based on the Kenya Demographic and Health Survey (KDHS) data, 2008/9. The socioeconomic variables considered are: years of schooling, parental educational attainment, exposure to mass media, place of residence and wealth quintile. Cultural variables considered are: ethnicity and religion while the biological and behavioral factors variables considered is age

at first sex, age at first marriage, current marital status and contraceptive use. The conceptual framework that will be employed herein is based on the Bongaarts model (1984) and both descriptive (frequency and cross tabulation) as well as multivariate analyses will be utilized.

1.2 The Problem Statement

Adolescent fertility has increasingly been viewed as a source of social and policy concern. Early childbearing has been linked to higher rates of maternal and child morbidity and mortality, truncated educational opportunities, and lower future family income. According to the 2008–09 KDHS, 18% of young women age 15–19 have already begun childbearing: 15% are mothers and an additional 3% are pregnant with their first child. In Coast Province 26 percent of teenagers aged 15-19 had either had a live birth or were pregnant with their first child at the time of the survey. Teenage fertility in Coast Province is the second highest in Kenya after Nyanza Province whose prevalence is 27 percent and the lowest is in Central Province with 10 percent. A girl who has a child at a young age will probably drop out of school; even if someone else in her family helps to take care of the baby, she will probably not be able to find a steady job that pays enough to provide for herself and her child; she may feel impelled to marry someone she might not otherwise have chosen. Her life choices are few, and most of them are bad.

1.3 Study Objectives

The overall objective of this study is to analyse, using secondary data from the KDHS 2008-9, the determinants of teenage (age 15-19) childbearing in Coast Province, Kenya.

The specific objectives are:

(i) To investigate the socioeconomic factors influencing teenage child bearing

(ii)To determine the cultural factors influencing teenage child bearing

(iii)To examine the biological and behavioral factors influencing teenage child bearing

1.4 Justification of the study

Findings from this study will help unearth some of the catalysts to such high teenage fertility in the Kenyan Coast which is at 26% while the national prevalence is 18%.A good understanding of teenage fertility can result in improved services to this very vulnerable special group. There are various critical reasons as to why it is important to understand more about teenage fertility. Children born to very young mothers are normally predisposed to higher risks of illness and death due to the limited exposure of the mothers to reproductive health services. Adolescent mothers are also more likely to experience complications during pregnancy and are less likely to be prepared to deal with them, which often leads to maternal deaths. As a result of their early entry in to child bearing, the mothers are denied an opportunity to pursue basic and advanced academic goals. This eventually affects their welfare and social status and hence limits access to many reproductive health programs (KDHS 2008/9).Children of teen mothers often suffer from poor school performance and ultimately they are less likely to complete high school than if their mothers had delayed childbearing (Kost and Henshaw).

Vitamin deficiencies are more common, and the teenage mother's weight gain is likely to be inadequate. Since the teenage mother is still growing herself, she needs to eat properly not only for her own growth but for normal growth of the fetus. Pelvic bones do not reach their maximum size until about the age of 18; therefore, the pelvis of the teenage mother may not have grown enough to allow vaginal delivery of a normal-size baby. For this reason, the incidence of cesarean section is higher in teenage mothers - a baby that can be delivered vaginally when the mother is 20 is often too large to have been delivered vaginally when she is much younger.

There are special risks to a baby when the mother is not fully mature. Because most teenagers are not physically, emotionally, or financially ready to carry and care for a child, their babies tend to have low birth weight and are predisposed to a variety of illnesses. A teenage mother will need the full support of her family to live a healthy lifestyle for her and her baby. Children of teens often have insufficient health care. Despite having more health problems than the children of older mothers, the children of teen mothers receive less medical care and treatment. For those who do, more of the medical expenses they incur are paid by others in society. One recent study suggested that the medical expenses paid by society would be reduced dramatically if teenage mothers were to wait until they were older to have their first child. Teenagers often do not use contraceptives, and unfortunately, nearly two thirds of all teenage pregnancies are unintended. The vast majority of teen mothers are not married, but few give up children for adoption or care by others. For this reason, the mothers often must drop out of school and cannot hold full-time employment. They must suddenly assume the responsibility of raising a child before they are ready, emotionally or financially.

Children of teen mothers often receive inadequate parenting. Children born to teen mothers are at a higher risk of poor parenting because their mothers – and often their fathers as well - are typically too young to master the demanding job of being a parent. Still growing and developing themselves, teen mothers are often unable to provide the kind of environment that infants and very young children require for optimal development. Children with adolescent parents often fall victim to abuse and neglect.

Future prospects of teenagers decline significantly if they have a baby. Teen mothers are less likely to complete school and more likely to be single parents. There are also serious health risks for adolescents who have babies. Common medical problems among teen mothers include poor

weight gain, pregnancy induced hypertension, anemia, sexually transmitted infections (STIs) and cephalopelvic disproportion. Later in life, adolescent mothers tend to be at greater risk for obesity and hypertension than women who were not teenagers when they had their first child. Teen pregnancy and motherhood is also closely linked to poverty and single parenthood. Therefore, reducing teen pregnancy and childbearing is an obvious place to anchor serious efforts to reduce poverty in future generations.

Babies born to teenage mothers are more likely to die in the first year of life compared with babies born to mothers older than 20 years of age. Children born to teen mothers suffer from higher rates of low birth weight and related health problems. The proportion of babies with low birth weight born to teens is 28 percent higher than the proportion for mothers age 20-24. Low birth weight raises the probabilities of infant death, blindness, deafness, chronic respiratory problems, mental retardation, mental illness and cerebral palsy. In addition, low birth weight doubles the chances that a child will later be diagnosed as having dyslexia, hyperactivity or another disability. Zabin and Kiragu (1998) reviewed the evidence for the effects of early childbearing (within and outside of union) and pointed to a number of health consequences including, for the mother, higher than average levels of blood pressure, toxaemia, anaemia, bleeding, obstructed and difficult labour, premature delivery, and death. In addition, children born to teenagers are susceptible to higher incidence of low birth weight (which itself can lead to neurological problems, retardation, death), prematurity, stillbirth, and neonatal mortality.

Teen pregnancy is closely linked to poverty and single parenthood. The growth in single parent families remain the single most important reason for increased poverty among children over the last twenty years. Out of wedlock childbearing (as opposed to divorce) is currently the driving force behind the growth in the number of single parents, and half of out of wedlock births are to

teens. Therefore, reducing teen pregnancy and childbearing is an obvious place to anchor serious efforts to reduce poverty in future generations.

1.5 Study Limitation

Data for this study was obtained from the KDHS 2008-09. The data source being secondary is a study limitation in itself but the investigator through an in-depth review of literature established the predictors to teenage childbearing.

Similar studies have found associations between teenage pregnancy and characteristics of the adolescents' mothers, including parity and age at first delivery which were not some of the characteristics explored in the KDHS 2008-9.

Adolescent childbearing can be measured by two means: (1) the age-specific fertility rate of women age 15-19 years, and (2) the proportion of women who have had a child by a given adolescent age, for example, by age 15, 17, or 19, based on responses from teenagers age 15-19 and 20-24 years who have completed their teenage years. The first measure describes the current incidence of childbearing in the three years prior to the survey for ever married women age 15-19. However, it does not present the complete fertility experience of this cohort, as they have not completed their adolescent years.

CHAPTER 2: LITTERATURE RIVIEW

2.1 Introduction

Several studies have documented the socio-demographic and socioeconomic characteristics of adolescents in Kenya. Among these are the 1977/78 Kenya Fertility Survey (KFS), the 1979, 1989 and 1999 Population Census reports, and the 1984 Kenya Contraceptive Prevalence Survey (KCPS, 1984). According to Kiragu et al. (1998), adolescent reproductive health has now become an even greater priority at a policy level, as attested to by the recent sessional papers on AIDS as well as the national Information, Education, Communication and Advocacy Strategy.

Research has identified a host of factors - related to individual behavior, family and community situations, and cultural pressures – that contribute to teen pregnancy. These include behavior and risk-taking, the environment, cultural and media messages. Teens who get pregnant or cause a pregnancy are often engaged in a pattern of poor choices. Teens who use or abuse drugs and alcohol, who have had a history of violence and delinquency, or are failing at or dropped out of school have higher rates of sexual activity. Teens using drugs and alcohol are more likely to put themselves in sexually risky situations and are much less likely to use contraception. Teen girls whose first partners are older teens or adult men are also likely to use contraception and are more likely to report that their first sexual experience was involuntary or unwanted. Teens who begin intercourse at a young age have a higher risk of getting pregnant or causing a pregnancy. Giving teens the skills and motivation to make informed decisions about sexuality can reduce sexual risk-taking. Helping teens avoid other risk-taking behaviors may also help teens avoid a pregnancy (Ainsworth, 1984)

The environment that children grow up in has an important influence on their risk of teen pregnancy. Teens at greatest risk of pregnancy are more likely to live in areas with high poverty rates, low levels of education, high residential turn over and high divorce rates. Their parents are more likely to have low levels of education, to be poor, to have experienced a divorce or separation, or to never have married, and their mothers and older sisters are more likely to have given birth as adolescents (D. Kirby). Increasing the capacity of communities and families to nurture teens and help them stay in school and set goals for their lives may contribute to lower rates of teen pregnancy. Young people who feel supported by parents, school and the community during adolescence are buffered against the risk of too early pregnancy.

Most teen pregnancy prevention programs have emphasized education, skills, abstinence and access to contraception. However, the definition of what constitutes teen pregnancy prevention is best explained to include activities that seek to instill teens with confidence and a sense of the future. This speaks to motivation to avoid pregnancy, a critical element in a pregnancy free-adolescence. A better understanding of teenage fertility can result in improved services to this very vulnerable group. In an attempt to address the reproductive health needs and to reduce fertility of this special group, the government through the National Coordinating Agency for Population and Development (NCPD), put in place an Adolescent Reproductive Health Policy. As such, there are various critical reasons as to why is it important to understand more about teenage fertility and factors fueling adolescent childbearing.

In a study conducted by Magadi and Agwanda (2009), delayed initiation of sexual intercourse, age of marriage and childbearing among adolescent girls (12-19 years) in South Nyanza were associated with high socioeconomic status of the household, high educational attainment, mother's high educational attainment, and communication with parents and girlfriends.

From the KDHS 2008-9, an analysis of teenage pregnancy and motherhood shows that percentage of women age 15-19 who have had a live birth or who are pregnant with their first child and percentage who have begun childbearing shows that: percentage of women who begun childbearing at age 15, 16, 17, 18 and 19 was 2.1%, 9.4%, 16.5%, 26.2% and 36.2%, respectively. By urban and rural residence it is 18.5% and 17.5% respectively. By province, it shows that in Coast province 25.7% had begun childbearing as compared to only 10.1% in Central Province. By education level, it shows that with no education it was at 32.1% while secondary and above education it was 10%. By wealth quintile, those at the lowest quintile were 23.7% with those in the highest quintile being 16.4%.

Why the focus on teen fertility?

First, although a large proportion of non-marital births is to adult women, half of first non-marital births are to teens. Thus, the pattern tends to start in the teenage years, and, once teens have had a first child outside marriage, many go on to have additional children out of wedlock at an older age. A number of programs aimed at preventing subsequent births to teen mothers have been launched but few have had much success. So, if we want to prevent out-of-wedlock childbearing and the growth of single-parent families, the teenage years are a good place to start.

Second, teen childbearing is very costly. A 1997 study by Rebecca Maynard of Mathematica Policy Research in Princeton, New Jersey, found that, after controlling for differences between teen mothers and mothers aged 20 or 21 when they had their first child, teen childbearing costs taxpayers more than $7 billion a year or $3,200 a year for each teenage birth, conservatively estimated.

Third, although almost all single mothers face major challenges in raising their children alone, teen mothers are especially disadvantaged. They are more likely to have dropped out of school and are less likely to be able to support themselves. Only one out of every five teen mothers receives any support from their child's father. Some research suggests that women who have children at an early age are no worse off than comparable women who delay childbearing. According to this research, many of the disadvantages accruing to early child bearers are related to their own disadvantaged backgrounds. This research suggests that it would be unwise to attribute all of the problems faced by teen mothers to the timing of the birth per se. But even after taking background characteristics into account, other research documents indicate that teen mothers are less likely to finish high school, less likely to ever marry, and more likely to have additional children outside marriage. Thus, an early birth is not just a marker of preexisting problems but a barrier to subsequent upward mobility. As Daniel Lichter of Ohio State University has shown, even those unwed mothers who eventually marry end up with less successful partners than those who delay childbearing. As a result, even if married, these women face much higher rates of poverty and dependence on government assistance than those who avoid an early birth. And early marriages are much more likely to end in divorce. So marriage, while helpful, is no panacea.

Fourth, the children of teen mothers face far greater problems than those born to older mothers. If the reason we care about stemming the growth of single-parent families is the consequences for children, and if the age of the mother is as important as her marital status, then focusing solely on marital status would be unwise. Not only are mothers who defer childbearing more likely to marry, but with or without marriage, their children will be better off. The children of teen mothers are more likely than the children of older mothers to be born prematurely at low

birth weight and to suffer a variety of health problems as a consequence. They are more likely to do poorly in school, to suffer higher rates of abuse and neglect, and to end up in foster care with all its attendant costs.

2.2 Socioeconomic Factors

2.2.1 Years of Schooling

In particular, a strong correlation between women's education and reduced childbearing consistently emerges from studies throughout the developing world (Ainsworth 1994, Martin and Juarez 1995). Mboup and Saha (1998) found that in many countries of sub-Saharan Africa, women with no schooling have about two to three children more than women with secondary or higher education. It has been suggested that in areas that have not yet achieved mass schooling, changes in behavior will be slow because of the slower pace of social interaction and diffusion, resulting in a lagging fertility decline. According to Gupta and Mahy (2003), young women with no education are more than three times as likely to have started childbearing by age 19 than those who have secondary and higher education (32% versus 10%). An investigation therefore will be carried out to unearth the independent impacts of years of schooling on age at first birth. The objective is to assess whether increased years of schooling have exercised a consistent impact on delayed childbearing among adolescents, net of other potentially confounding influences.

Using data from a longitudinal cohort, it was found that factors relevant to teens' school experiences—including characteristics of their school and classroom, their family background, and individual engagement—were associated with the risk of school-age pregnancy leading to a live birth. The research tested whether high school dropout status, or other measures of school engagement, similarly influenced the likelihood of school-age pregnancy among teens. A set of

proportional hazards models indicated that for all racial and ethnic groups, high levels of school engagement were associated with postponing pregnancy. Among White and Hispanic teens, dropouts—especially young dropouts—were more likely to have a school-age pregnancy, net of other family and educational factors. Although African American teens did not show a relation between dropping out and the risk of pregnancy, other measures of engagement were important predictors of having a school-age pregnancy for this group (Manlove, 2010)

Expanding access to formal education is generally seen as a crucial intervention for preventing early childbearing among adolescents. Policy and decision-makers often implicitly assume a causal flow from girl's education to lower fertility. In some high fertility societies, small amounts of education may be unexpectedly linked to higher fertility, as exposure to schooling may undermine traditional practices of sexual abstinence and prolonged postpartum breastfeeding that otherwise would have acted to delay a new pregnancy (Bledsoe, 1999)

Empirical results indicate that girls' education level has significant influence on the probability of teenage birth, with non-schooling adolescents and those with primary school level education being more vulnerable. Among the variables used as proxies for access to sex education, availability of church forums that educate adolescents about sex and family life issues reduce probability of teenage pregnancy (Were; 2007)

A study done by Mary Mahy and Neeru Gupta (2003) to examine whether increased years of schooling exercised a consistent impact on delayed childbearing in Sub-Saharan Africa. Data were drawn from Demographic and Health Surveys conducted in eight countries (including Kenya) over the period 1987 – 1999.Multiple logistic regressions were used to assess trends and determinants in the probability of first birth during adolescence. Girl's education from about the

secondary level onwards was found to be the only consistent covariate. No effect of community aggregate education was discernible, after controlling for urbanity and other individual level variables. The results reinforced other previous findings that improving girl's education is a key instrument for raising ages at first birth, but suggest that increases in schooling at lower levels alone bear only somewhat on the prospects for fertility decline among adolescents.

2.2.2 Respondents' parents' educational attainment

This was used as a measure of respondents' childhood socioeconomic status. The highest level of education of either of the respondent's parents when the respondent was a teen was used as a measure of childhood socioeconomic status. The respondent's highest level of parental education could be determined by the response to the question: "thinking back to who you lived with when you were about 13 years old, what was the highest grade or year of school completed by your mother, father, or main guardian?" this can be categorized as "did not finish high school," "high school graduate," "some college," or "college graduate."

2.2.3 Exposure to mass media

Teens are barraged by TV shows, films, songs and advertising in which sex has little meaning, unplanned pregnancy seldom happens, and sexual partners are rarely married, let alone committed to each other. Sexual themes permeate the pictures and plot lines. Teens may spend more time in the presence of these messages than in the presence of alternative messages that value staying in school and preparing for parenthood. Teen pregnancy is just one problem that young people face in our culture today - and perhaps not the most pressing one. Parents identify violence, gangs, drugs and pressure from peers to engage in unhealthy behaviors as even greater risks than early pregnancy.

Radio listenership is considered as a representative of access to the mass media and new ideas. The use of mass median form of print and electronic such as newspapers, television, radio, leaflets, brochures, comic booklets, posters, music, and hotlines to educate teens on various health issues has been considered in may studies to influence delayed child bearing among adolescents. Focused multi-pronged mass media campaigns with clear messages are effective at facilitating behavior change including delayed sexual debut/abstinence, being faithful to one partner if abstinence is not tenable and use of contraceptives particularly the condom among young people. This mode of communication is popular with young people and provides a cost effective way of reaching adolescents with information. A number of organizations have improved on the approach to make it more interactive by either forming discussion groups

after sessions or providing call-in options to the target group.

The media has an important role in pregnancy prevention. With a long term teenage pregnancy prevention media campaign, the consequences of illicit unprotected sex that can result to early pregnancy can be avoided. Airing of commercials or public information campaigns can instill behavior change and delayed sexual debut among teens resulting in postponement of childbearing. In the Netherlands, Germany and France in which teenage birth rates are many times lower than that in the U.S, promote healthy, lower-risk sexual behavior through national media campaigns that have a high degree of influence with young women and men (Berne & Huberman, 1999)

Information access is essential for increasing people's knowledge and awareness of what is taking place around them, which may eventually affect their perceptions and behavior. In the 2008/9 KDHS, exposure to mass media was assessed by asking how often a respondent reads a

newspaper, watches television, or listens to a radio. Looking at the percentage of women exposed to different types of media by age, urban and rural residence, province, level of education and wealth quintile; it showed that 26.3% of women aged 15-19 read a newspaper at least one a week, 31.6% watched television at least once a week, 76.6% listened to the radio at least once a week. Media exposure by place of residence showed that 49.2% of the urban women read a newspaper at least once a week compared to 15.8% of the rural women; 69.3% of the urban women watched TV at least once a week compared to 22.1% of the rural women, 83.1% of the urban women listened to the radio at least once a week compared to 74.9% of the rural women. In Coast province, 25.7% reported reading a newspaper at least once a week, 34.6% watching television at least once a week with 65.2% listening to the radio at least once a week. This can be compared to Nairobi where it was 59.1%, 86.1% and 87.8% for the same variables, respectively. The lowest was North Eastern with 6.9%, 9.5% and 25.7% respectively for the same variables.

Access to mass media increases with educational attainment and wealth quintile for both women and men. The proportion of women who listened to the radio at least once a week increased from 35% of women with no education to 87% to those at least with some secondary schooling. Similarly, the proportion of women who watched TV at least once a week increased from only 3% of those in the poorest wealth quintile to 76% to those in the highest quintile (KDHS 2008-09).

2.2.4 Place of residence

The urban and rural distinction was considered important because of differences in access to health facilities, cultural beliefs, living situations and opportunities. Young motherhood is slightly more common in urban areas than in rural areas. While residence and radio exposure will

refer to characteristics reported at the time of the survey, given the focus on younger respondents, these variables can generally be considered to closely reflect the characteristics at the time of first birth.

2.2.5 Wealth quintile

Wealth status at household level is a key determinant of adolescent fertility. Teenagers from poorer households are more likely to have begun childbearing earlier than teenagers from wealthier households.

2.3 Cultural factors

2.3.1 Ethnicity

Ethnic background can strongly influence and shape key demographics including teenage fertility. In Coast Province, there are diverse cultures with various communities including the: Taita/Taveta, Pokomo, Arabs, Swahili, Mijikenda (Giriama, Duruma, Chonyi, Ribe, Rabai, Jibana, Digo, Kambe and Kauma) and non-Coastal communities who have migrated and lived in the region for years.

2.3.2 Religion

Coast province has diverse religious groups including: Christians (Catholics and Protestants) , Muslims, traditionalists, among others. Religion, just like culture, can shape key demographics of a population. It is well documented how different religious denominations react towards the use of modern contraception, entry into sex, marriage and abortion which then affect fertility.

2.4 Biologic and Behavioral factors

2.4.1 Age at first sex

Age at first sexual intercourse is a key determinant of teenage childbearing. About half of women age 25–49 (48%) and more than half of men age 25–49 (55%) were sexually active by the age of 18. 13% of women and 18% of men had had sex by the age of 15. Women and men start sexual activity at about the same age (median age of 18.2 years for women and 17.7 years for men).Age is positively related to teenage pregnancies, with older adolescents being more predisposed to pregnancies. Although age at first marriage is often used as a proxy for first exposure to intercourse, the two events do not necessarily occur at this time since men and women engage in sexual relations before marriage. In 2008-9 KDHS, women and men were asked how old they were when they first had sexual intercourse. 12% of women age 20-49 had sex before age 15, and about half had their first sex by their 18th birthday. Older women are slightly more likely to have had their first sexual encounter at earlier age, although the difference between the older and younger women is minimal.

Differentials in age at first sex are evident with women in rural areas starting sexual activity about 2 years earlier than their urban counterparts. Among women age 20-49 in Coast Province, median age at first sex was 17.6 (the lowest being Nyanza at 17.1 and the highest being Nairobi at 19.7).Women with at least some secondary education begin sexual activity almost three years later than those with no education. Similarly, the wealthiest women tend to initiate sexual activity almost three years later than those who are poor.

2.4.2 Age at first marriage

Marriage is generally associated with fertility because it is correlated with exposure to risk of conception. The duration of exposure to the risk of pregnancy depends primarily on the age at which women first marry. Women who marry earlier, on average, have their first child earlier and give birth to more children, contributing to higher fertility rates. In the KDHS 2008-9, half of all women enter marriage before their 20th birthday. In Coast Province, median age at first marriage among women age 25-29 at the time of the survey was 19.4, age 35-39 was 19.1 while 45-49 was 18.1. The rest of the other age categories had a median age at first marriage above 20. Across all the age categories, North Eastern had the lowest median age at first birth, followed by Nyanza and Coast.

2.4.3 Current Marital Status

Marriage is a primary indication of regular exposure of women to the risk of pregnancy and is therefore important for the understanding of fertility. Populations in which age at first marriage is low tend to have early childbearing and fertility.

2.4.4 Contraceptive use

A potentially influential variable on the risk of early child-bearing was considered as access (physical, financial and socio-cultural) to family planning (FP) and reproductive health care. A strong family planning program in the community could indirectly influence an adolescent's familiarity with contraception and knowledge of the health risks of early sex and childbearing. In Kenya, knowledge of FP is nearly universal; 95% of all women age 15–49 know at least one modern method of FP yet teenage childbearing still remains a big challenge. Contraceptive use in the Coastal Region of Kenya however is low at 30% compared to the national average of 39%.

Though use of contraceptives is found to have a positive effect, only a small proportion of adolescents were using modern contraceptives and, supply side factors such as quality and availability were not accounted for. In the 2008-9 KDHS, information on knowledge of contraception was collected including modern methods i.e. female sterilization, male sterilization, the pill, intra-uterine device (IUD), injectables, implants, male condoms, female condoms, lactational amenorrhoea and emergency contraception and the traditional methods (rhythm or calendar method and withdrawal). Emphasis on level of knowledge was placed on women because they have the greatest level of exposure to the risk of pregnancy and since most methods of contraception are designed for them.

In the KDHS 2008-9, it was evident that ever use of contraception among all women age 15-19 irrespective of marital status was the lowest in terms of proportion with only 14.1% reporting ever use of any method of contraception. For currently married women age 15-19, only 38.6% had ever used any method of contraception. For sexually active unmarried women age 15-19, only 46.7% had ever used contraception. Contraceptive prevalence peaks among married women in the 30-34 age group and is lowest for married women age 15-19. Among all women, current use of any method of contraceptives by age 15-19 is 5.9%. For currently married women for the same age group is 22.5%, for sexually active women is 27.7% and for sexually active unmarried women is 26.8%.

Current use of any contraceptive varies by: residence (53% urban and 43% rural); province with the lowest being North Eastern at 4% followed by Coast at 34%. The highest is in Central at 67%; education level where those with no education at 14% compared with secondary and above education at 60% and by wealth quintile with the lowest having 20% and fourth quintile having 57%.

2.5 The Conceptual Framework

Since the purpose of this study is to investigate the determinants of teenage childbearing in the Coast of Kenya, the fertility framework by Bongaarts (1984) will be adopted. The framework analyses the relationship between intermediate fertility variables and fertility levels. An intermediate fertility variable is defined as any behavioral or biological factor through which socioeconomic, cultural, or environmental variables affect fertility. Figure 1 below summarizes the relationships among the determinants of fertility.

The model has been chosen because it is the most popular and widely adopted model in the study of fertility. It is considered to be the most crucial and most comprehensive in most systematic analytical frameworks in fertility studies. Under the socioeconomic factors influencing fertility, the specific factors through which these operate will be identified. For example, the level of education of women is a socioeconomic indicator that is frequently found to be negatively related to fertility. Biological and behavioral factors through which socioeconomic, cultural and environmental variables affect fertility are called intermediate fertility variables. The primary characteristic of an intermediate fertility variable is its direct influence on fertility. If an intermediate variable, such as prevalence of contraception, changes, then fertility changes also

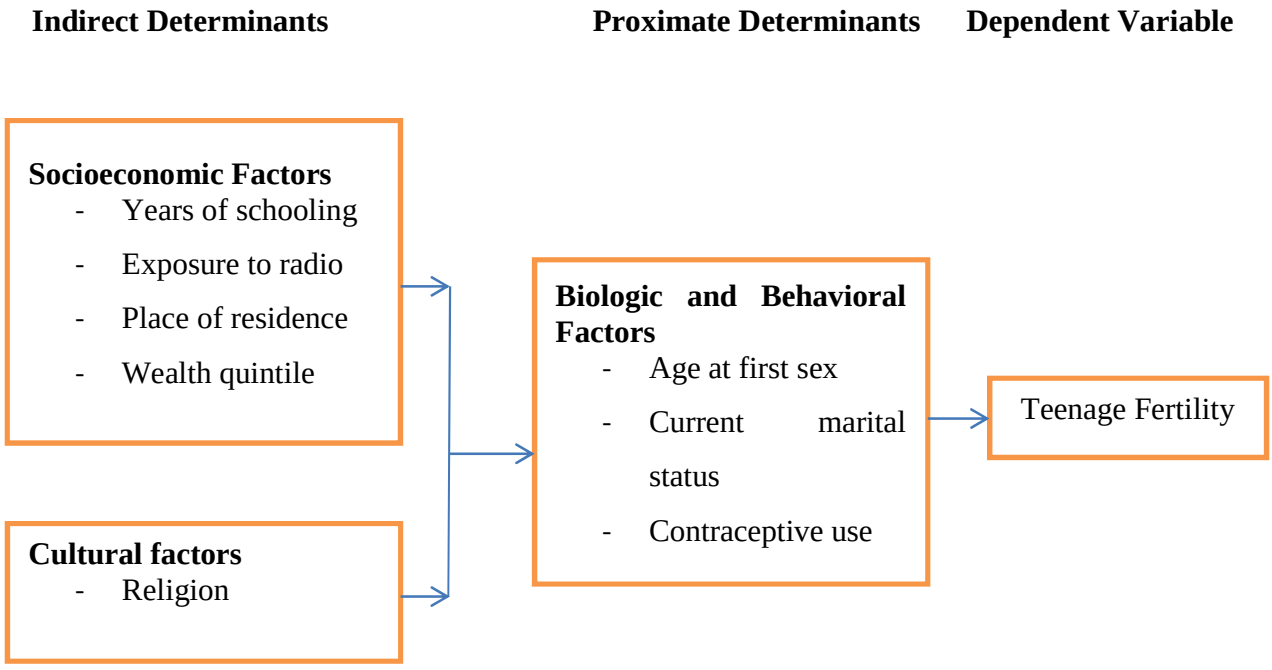
(assuming the other intermediate variables remain constant), while this is not necessarily the case for an indirect determinant such as income or education.

A complete set of eight intermediate fertility variables are proposed, but it is shown that only four are important determinants of fertility differentials among populations: proportions married, contraception, induced abortion, and lactational infecundability.

A simple model that allows quantitative estimation of the fertility effects of each of these four variables is outlined, and its application is illustrated.

2.6 The Operational Framework

The background variables (socioeconomic and cultural factors) will act through a set of proximate/direct determinants to influence teenage childbearing as shown in figure 2 below.



Adopted from the Bongaarts Framework (1984)

2.7 Definition of Key Concepts

The explanatory variables are classified in to three groups of factors: socioeconomic, cultural, biological and behavioral. The choice of these variables was guided by literature on the determinants of teenage fertility. See table 1 below with the variables and their measurement.

2.7.1 Teenage Fertility

This is the proportion of women age 15-19 who have had a live birth or are now pregnant.

2.7.2 Socioeconomic factors

These refer to the prevailing conditions of communal relevance which includes: respondent's years of schooling, parental educational attainment, exposure to mass media, place of residence and wealth quintile.

2.7.3 Cultural factors

These are comprised of the respondent's ethnic background and religion.

2.7.4 Biological and Behavioral factors

These are comprised of age at first intercourse, current marital status, contraceptive use and age at first marriage.

Table1: Variables and their Measurement

Variable	Measurement	Factors captured	Type of variable
Teenage fertility	Pregnant or have had a live birth = 1 Not pregnant or not had a live birth = 0	Fertility status of the teenager	Dependent
Years of schooling	0 = No education 1 = 1-7 years of schooling 2 = 8 years and above of schooling	Socio economic factors	Independent
Frequency of	1=Not at all	Socio economic	Independent

listening to radio	2=Less than once a week 3=At least once a week 4=Almost every day	factors	
Place of residence	1 = Urban 2 = Rural	Socio economic factors	Independent
Wealth index	1 = poorest 2 = poorer 3 = Middle 4 = richer 5 = richest	Socio economic factors	Independent
Religion	1 = Roman Catholics 2 = Protestants and other Christians 3 = Muslims 4 = Other	Cultural factors	Independent
Age at first sex	1= below 10 2 = 11 to 15 3 = 16-19	Biological and Behavioral Factors	Independent
Current marital status	1 = never married 2 = married/living together 3 = Widowed/divorced/Not living together	Biological and Behavioral Factors	Independent
Contraceptive use (current use)	1 = No 2 = Yes	Biological and Behavioral Factors	Independent

CHAPTER 3: DATA SOURCE AND METHODS OF ANALYSIS

3.1 Data source

The study focus is to investigate the determinants of teenage (age 15-19) childbearing in the Coast Province; which is the second highest of the eight provinces in Kenya. Secondary data was drawn from the Kenya Demographic and Health Surveys (KDHS) conducted in 2008/9. The KDHS is one of the largest studies producing cross-national and comparative quantitative information on fertility and reproductive health throughout Kenya. Information was collected from personal interviews with a representative sample of women of reproductive age.

3.2 Methods of analysis

A multivariate logistic regression model will be used to evaluate the determinants of adolescent (age 15-19) childbearing by employing the *SPSS* statistical software package. Descriptive statistics generated will show the distribution of women by their key background characteristics. Cross tabulations will be used to show any significant relationships that exist between each of the various independent variables and the dependent variable. To determine whether these associations are statistically significant, a Chi-square test will be used to measure the dependence of the association. The Chi-square will also show if any two variables of cross tabulations are independent.

3.3 Logistic Regression

In general, we can have multiple predictor variables in a logistic regression model.

$$\text{logit}(p) = \log(p/(1-p)) = \beta 0 + \beta 1 * x1 + ... + \beta k * xk$$

Applying such a model to our example dataset, each estimated coefficient is the expected change in the log odds of being in an honors class for a unit increase in the corresponding predictor variable holding the other predictor variables constant at certain value. Each exponentiated

coefficient is the ratio of two odds, or the change in odds in the multiplicative scale for a unit increase in the corresponding predictor variable holding other variables at certain value.

Since the dependent variable is dichotomous, denoting whether an adolescent has born a live child/is pregnant or not at the time of the survey, binary logistic regression will be used to assess the effect of the factors (independent variables) that are theoretically said to be associated with teenage fertility (dependent variable). Logistic regression can be used to predict a dependent variable on the basis of continuous and/or categorical independents and to determine the percent of variance in the dependent variable explained by the independents; to rank the relative importance of independents; to assess interaction effects; and to understand the impact of covariate control variables. The impact of predictor variables is usually explained in terms of odds ratios.

Logistic regression applies Maximum Likelihood Estimation after transforming the dependent variable into a logit variable (the natural log of the odds of the dependent occurring or not). In this way, logistic regression estimates the odds of a certain event occurring.An explanation of logistic regression begins with an explanation of the logistic function as per the formula: $$f(z) = \frac{1}{1 + e^{-z}}$$

The variable *z* represents the exposure to some set of risk factors, while *f*(*z*) represents the probability of a particular outcome, given that set of risk factors. The variable *z* is a measure of the total contribution of all the risk factors used in the model and is known as the logit.The variable *z* is usually defined as: $$z = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \cdots + \beta_k x_k,$$

Where z is the log odds of the dependent variable and where β_0 is the constant and where there are k independent (X) variables, some of which may be interaction terms.

CHAPTER 4: DETERMINANTS OF TEENAGE CHILDBEARING

4.1 Introduction

This chapter is subdivided into three sections. The first section presents the characteristics of the study population. The second section focuses on the association between teenage fertility and each of the selected socio-economic, cultural, biological and behavioral factors. Cross tabulations have been used to test the association between teenage fertility and the various independent variables. The last section explains the determinants of teenage fertility in Coast Province.

4.2 Characteristics of the Study Population

4.2.1 Years of schooling

From table 2 below, background characteristics by the respondents' years of schooling shows a 49.4%of the teenagers had 1-7 years of schooling compared to those who have no education (7.2%) and eight years and above years of schooling (43.5%).

4.2.2 Type of place of Residence

Majority of the respondents were residing in rural areas (60.8%) while 39.2% of them were residing in the urban areas.

4.2.3 Wealth Index

Teens with the poorest wealth index were the majority (30.4%) followed by those in the richest wealth index (23.6%). All the rest were in the poorer, middle and richer wealth index, at 16.5%, 13.9% and 15.6% respectively.

4.2.4 Frequency of Listening to the Radio

42.6% of the teens listened to the radio almost every day, while 22.8% of them did not listen to the radio at all. 21.9% of the teens listened to the radio at least once a week while 12.7% of them listened to the radio less than once a week.

Table 2Frequency Distribution of Respondents by Selected Background Characteristics

Data Source: KDHS 2008-9		
n=237	**Frequency**	**Percent**
Teenage Fertility		
Currently Pregnant/ever had a live birth	64	27
Currently Not Pregnant/Never had a live births	173	73
Socioeconomic factors		
Years of schooling		
0=No education	17	7.2
1=1-7 years of schooling	117	49.4
2=8+ years of schooling	103	43.5
Type of place of Residence		
1=Urban	93	39.2
2=Rural	144	60.8
Wealth index		
1=Poorest	72	30.4
2=Poorer	39	16.5
3=Middle	33	13.9
4=Richer	37	15.6
5=Richest	56	23.6
Frequency of listening to radio		
1=Not at all	54	22.8
2=Less than once a week	30	12.7
3=At least once a week	52	21.9
4=Almost every day	101	42.6
Cultural factors		
Religion		
1=Roman catholic	15	6.3
2=Protestant/other Christian	100	42.2
3=Muslim	113	47.7
4=No religion	9	3.8
Biological and Behavioral Factors		
Current Marital Status		
1=Never married	175	73.8
2=Currently married	54	22.8
3=Formerly married	8	3.4

Age at first sex		
1=Never had sex	141	59.5
2=<15 years and below	51	21.5
3=16-19	45	19.0
Current use of modern contraceptives		
1=No	224	94.5
2=Yes	13	5.5

47.7% of the respondents were Muslim, 42.2% were protestant and other Christian, 6.3% were Roman Catholic while 3.8% had no religion.

73.8% of the teens were never married, 22.8% were currently married while only 3.4% were formerly married.

Of the respondents, 59.5% had never had sex, 21.5% had their sexual experience at age 15 and below while 19% when they were age 16-19 years.

5.5% of respondents reported current use of modern contraceptives while 94.5% reported non-use.

4.3 Findings from the Bivariate Analysis

This section presents the results from the bivariate analysis showing the association between teenage fertility and the predictor variables. Cross tabulations with the Chi-Square tests have been used to test the association between teenage fertility and other independent variables. Bivariate results reveal that years of schooling, religion current marital status, age at first sex and contraceptive use were significantly associated with teenage fertility. Table 3 below shows association between teenage fertility and predictor variables.

Table 3: Association between Teenage Fertility and Selected Background Characteristics

Background variables	Teenagers have had a live birth or are now pregnant		Total (n)	Chi-Square, Df, Significance
	No	Yes		
Years of schooling				
0=No education	35.3%	64.7%	17	$\chi2 = 17.505$
1=1-7 years of schooling	70.1%	29.9%	117	Df =2
2=8+ years of schooling	82.5%	17.5%	103	Sign.= <0.0001
Type of place of Residence				$\chi2 = 0.070$
1=Urban	72.0%	28.0%	93	Df =1
2=Rural	73.6%	26.4%	144	Sign.=0.791
Wealth index				
1=Poorest	69.4%	30.6%	72	$\chi2 = 2.257$
2=Poorer	79.5%	20.5%	39	Df = 4
3=Middle	72.7%	27.3%	33	Sign.=0.689
4=Richer	67.6%	32.4%	37	
5=Richest	76.8%	23.2%	56	
Frequency of listening to radio				
1=Not at all	64.8%	35.2%	54	$\chi2 = 3.768$
2=Less than once a week	66.7%	33.3%	30	Df = 3
3=At least once a week	76.9%	23.1%	52	Sign.=0.288
4=Almost every day	77.2%	22.8%	101	
Religion				
1=Roman catholic	86.7%	13.3%	15	$\chi2 = 20.785$
2=Protestant/other Christian	83.0%	17.0%	100	Df = 3
3=Muslim	66.4%	33.6%	113	Sign.= <0.0001
4=No religion	22.2%	77.8%	9	
Current Marital Status				
1=Never married	93.7%	6.3%	175	$\chi2 = 146.656$
2=Currently married	16.7%	83.3%	54	Df = 2
3=Formerly married	0.0%	100%	8	Sign.= <0.0001
Age at first sex				
1=Never had sex	99.3%	0.7%	141	$\chi2 = 123.459$
2=<15 years and below	29.4%	70.6%	51	Df = 2
3=16-19	40.0%	60.0%	45	Sign.= <0.0001
Current use of modern contraceptives				
1=No	75.9%	24.1%	224	$\chi2 = 17.388$
2=Yes	23.1%	76.9%	13	Df = 1
				Sign.=0.0001

It is apparent that 65%, 30% and 18% of teenage childbearing occurred among those adolescents with no education, 1-7 years of schooling and those with 8 years and above years of schooling, respectively. For place of residence, 28% and 26% of teenage childbearing was among those residing in urban and rural areas, respectively. For wealth index, 31%, 21%, 27%, 32% and 23% of teenage childbearing was among those in the poorest, poorer, middle, richer and richest indices, respectively. Frequency of listening to radio indicated that teenage childbearing was highest (35%) among those who did not listen to the radio at all, 33% for those who listened to radio less than once a week, 23% for those who listened to the radio at least once a week and 23% to those listened to the radio almost every day. Religion showed that teenage fertility was highest (78%) among those without a religion, followed by Muslim teenagers (34%) while Protestant/other Christian and Roman Catholic had 17% and 13% teenage fertility rates, respectively. Current marital status showed that teenage fertility was 100% to those who were formerly married, 83% to those who are currently married and 6% to those never married. Teenage fertility was highest (71%) among those who had first sex at the age of 15 and below, followed by those who had their first sexual encounter at the age between 16-19 (60%). Teens who had reported current use of modern contraceptives had 77% fertility compared to those who reported non-use of modern contraceptives.

4.4 Findings from the Multivariate Logistic Regression

This section presents the effects of socioeconomic, cultural, behavioral and biological factors on teenage fertility. As shown in table 4 below, years of schooling, place of residence, wealth index, frequency of listening to radio, religion, current marital status, age at first sex and current contraceptive use were all found not to be significantly associated with teenage fertility in the Coast Province.

Table 4: Results of logistic regression showing the effect of independent variables on Teenage Fertility

	B	Significance	S.E	Exp (B)
Constant	41.802	0.997	13057.751	1.427E+18
Years of schooling				
0=No education®				
1=1-7 years of schooling	-1.751	0.161	1.248	0.174
2=8+ years of schooling	0.016	0.982	0.750	1.017
Type of place of Residence				
1=Urban ®				
2=Rural	-0.912	0.318	0.913	0.402
Wealth index				
1=Poorest®				
2=Poorer	-1.457	0.290	1.378	0.233
3=Middle	-0.505	0.654	1.127	0.603
4=Richer	0.600	0.609	1.171	1.821
5=Richest	-0.561	0.610	1.100	0.571
Frequency of listening to radio				
1=Not at all®				
2=Less than once a week	0.861	0.324	0.874	2.366
3=At least once a week	0.154	0.867	0.924	1.167
4=Almost every day	0.061	0.945	0.884	1.063
Religion				
1=Roman catholic®				
2=Protestant/other	-20.880	0.995	3220.656	0.0001
Christian	-20.539	0.995	3220.656	0.0001
3=Muslim	-19.539	0.000	3220.656	0.0001
4=No religion				
Current Marital Status				
1=Never married®				
2=Currently married	-21.713	0.999	12.654.335	<0.0001
3=Formerly married	-18.625	0.999	12.654.335	<0.0001
Age at first sex				
1=Never had sex®				
2=<15 years and below	-20.240	0.995	3220.656	<0.0001
3=16-19	0.196	0.771	0.675	1.217
Current use of modern contraceptives				
1=No®				
2=Yes	-.0504	0.604	13057.751	0.604

- ® denotes the reference category
- Significant association (P-value <0.05)

Teenagers with 1-7 years of schooling were found to be 0.2 times less likely to have begun childbearing compared to those with no education. Similarly, teenagers with 8 years and above of schooling were found to be one times more likely to have initiated childbearing compared to those with no education.

Teenagers residing in rural areas were 0.4 times less likely to have initiated childbearing compared to those with residing in urban areas.

Teenagers with a poorer wealth index were 0.2 times less likely to have initiated childbearing compared to those in the poorest wealth index. Those in the middle wealth index were 0.6 times less likely to have initiated childbearing compared to those in the poorest wealth index. Those in the richer wealth index were 1.8 times more likely to have initiated childbearing compared to those in the poorest wealth index. Those in the richest wealth index were 0.6 times less likely to have initiated childbearing compared to those in the poorest wealth index.

Teenagers who listened to radio less than once a week were 2.4 times more likely to have initiated childbearing compared to those who did not listen to radio at all. Those who listened to radio at least once a week were 1.2 times more likely to have initiated childbearing compared to those who did not listen to radio at all. Those who listened to radio eve day were 1.1 times more likely to have initiated childbearing compared to those who did not listen to radio at all.

Teenagers whose age at first sex was between 16-19 years were 1.2 times more likely to have initiated childbearing compared to those who had never had a sexual experience.

Teenagers who reported current use of modern contraceptives were 0.6 times less likely to have initiated childbearing compared to those who reported non-use of modern contraceptives.

CHAPTER 5: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.0 Introduction

This chapter discusses the summary of the research findings, conclusions and recommendations for policy and further research. These recommendations are made on the basis of the findings of this study.

5.1 Summary

This study set out to analyze the determinants of teenage childbearing in the Kenyan Coast. Specifically, the study sought to examine the socioeconomic, cultural, biological and behavioural factors influencing the high teen fertility in this region. Teenage fertility was the dependent variable and was defined as the percentage of women age 15-19 who have had a live birth or who are pregnant with their first child a at the time of the survey.

Bivariate analysis indicated that there was a statistically significant relationship between years of schooling, religion, current marital status, age at first sex and current use of modern contraceptives with teenage fertility. In the multivariate logistic regression, there was no statistically significant relationship between all the background variables and teenage fertility.

5.2 Conclusion

As was stated in chapter 1, this study sought to analyze the determinants of teenage childbearing in the Kenyan Coast using evidence from the KDHS 2008-9 data. From the study findings, it is evident that years of schooling, religion, current marital status, age at first sex and current use of modern contraceptives were not significantly associated with teenage fertility. These results are consistent with other study results that have been previously done which is quite contradictory to previous studies done on the determinants of teenage child bearing (as demonstrated in the literature review for this study.

5.3 Recommendations for further Research and for Policy

It is widely recognized that fertility decline is due in part to increased schooling. Among adolescents, while we expect higher levels of education to be associated with lower probability of early first birth, the direction of causality is not very clear. A girl may decide to delay childbearing in order to complete her formal education. On the other hand, some teenage mothers may be forced to leave school after having a child. Further research to explain such temporal ambiguity is recommended. Further research to determine key factors and drivers of such a high teen fertility in the region compared to Central Province is also recommended to inform policy.

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