ADDIS ABABA UNIVERSITY
SCHOOL OF GRADUATE STUDIES

SOCIO-ECONOMIC AND PROXIMATE FACTORS AFFECTING FERTILITY IN RURAL ETHIOPIA: THE CASE OF CHEHA AND EZHA-AND-WOLENE WEREDAS

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ABSTRACT

In this study an attempt has been made to investigate the interrelationships between socio-economic factors and proximate determinants on the one hand and socio-economic factors and fertility on the other. In addition, the association between proximate variables and fertility was examined.

The study was based on a sample survey of 681 ever married women in the child bearing age group (15-49 years) and 160 currently married men selected from 10 out of 117 Peasant Associations found in Cheha and Ezha-and-Wolene Weredas.

The accuracy of the data on age and number of children ever born was evaluated by very simple demographic techniques. The data was analyzed using Chi-Square, simple correlation and multiple and stepwise regression.

Generally the bivariate analysis showed that proximate variables were found to vary among Peasant Associations according to the socio-economic background of the respondent. Women's education was directly related to age at first marriage, incidence of spousal separation, and frequency of marriage. But duration of breast-feeding and post partum sexual abstinence was lower among better educated women.

Age at first marriage, incidence of spousal separation and frequency of marriage were negatively associated with proportion muslim. Duration of breast-feeding abstinence and proportion of monogamous women were higher among muslims.

Economic status was observed to be positively associated with incidence of spousal separation and polygamy, but negatively related to frequency of marriage and duration of ful-breast- feeding. On the other hand child mortality and duration of ful -breast-feeding were negatively related.

The bivariate and multivariate analysis thus revealed that except education, all socio-economic factors (christianity, economic status and child mortality were positively related to fertility. Therefore, to lower fertility, it is recommended to raise women's education and reduce child mortality.

CHAPTER ONE

INTRODUCTION

1.1 The Problem

In spite of ups and downs, the general trend for the growth of world and regional populations has been positive. The world population which is estimated to have been 200-300 million (Durand, 1972:16) or about 250 million (Schnell and George, 1983:91) in A.D one reached a billion in 1830. It took a century (1830-1930) for the world population to grow from a billion to two billions, where as the next third, fourth and fifth billions were entertained only after 30,15 and 12 years respectively (Schnell and George, 1983:93 and UN, 1991 a:12-13).

The striking regional variation in the levels and trends at rate of population growth is, however, a more serious population issue than the aggregate growth. Between 1950 and 1990 the average annual rate of growth in more developed countries declined from 1.28% to 0.49% where as in the least developed countries it increased from 1.82% to a peak of 3.03%. Within the least developed region, the population situation in Africa is unique in that where as in Latin America and Asia mortality decline is accompanied by a reduction in population growth the reverse is true in Africa.

Since 1950 the level of total fertility in Africa has never been below 6 children per woman where as in Latin America and Asia Total Fertility declined from 5.87 and 5.92 in 1950/55 to 3.93 and 3.71 children per woman in 1980/85 respectively (UN 1991 a:182)

As far as Ethiopia is concerned, of the 32 most populous countries in the world, she ranked 24th in 1950, 22nd in 1990 and is projected to be 12th in year 2025, and now it is the third in Africa (UN, 1991a:22). Both the absolute and relative growth of population in Ethiopia have been rising from time to time. The total population increased from 11.8 million in 1900 through 13 million in 1920 to 21 in 1950 and 33 million in 1980. (C.S.A. 1988a;30). More over, in 1984, the census puts the total population at about 42 million. The average annual rate of growth which was only 0.2% in 1900 increased to 1% in 1920. Since 1950, the rate of increase has been faster than ever before reaching 2.2% in 1950, 2.8% in 1980 and 2.9% in 1984 (Central Statistical Authority (C.S.A) 1988a:23).

The C.S.A's medium variant projection puts the total population in 1990 at about 50 million with 3.2% annual rate of growth(C.S.A. 1988b:90). Therefore, the doubling time for the population has been progressively diminishing from 69 years in 1920 to 49 years in 1940 and 25 years in 1984 to 22 years in 1990.

It is the interplay between the level of fertility and mortality that is responsible for the population growth. The level of fertility in Ethiopia is among the highest in the World. In the period 1985-90 when the total fertility rate in Africa was 6.2 children per woman it was 6.8 children per

woman in Ethiopia (UN, 1991a;25). Some sources have shown that fertility has been increasing between 1970 and 1981 (Central Statistical Office (C.S.O), 1974; C.S.A, 1985 and Assefa, 1990). The estimated crude birth rate increased from 42.8 to 47.7 per 1000 persons and total fertility rate also increased from 5.8 to 7.5 children per woman. On the other hand, in the same period mortality as measured by crude death rate and infant mortality rate has been declining from 20 to 17.9 deaths per 1000 persons and from 153 to 139 infants deaths per 1000 live births. The increase in fertility and the decline in mortality has been faster in rural than urban areas. In the former case, total fertility increased from 5.8 to 7.7 children per woman (a 33% increase) and in the latter case it rose from 5.5 to 6.2 children per woman (a 9.4% increase). Likewise, in rural Ethiopia, crude death rate declined from 20.3 to 18.1 (12.2%) deaths per 1000 persons while in urban areas it went down from 16.9 to 15.4 (9.4%) deaths per 1000 population.

It is evident, therefore, that the rapid rate of population growth that the country is experiencing now is the result of increasing fertility and declining mortality. The fact that the change is faster in rural than what is in urban areas demonstrates that the pace of rural population growth determines how fast the total population increases.

In many of the least developing countries, including Ethiopia, rapid population growth is thought to have several interrelated social, economic and environmental implications that will be high lighted in the following pages.

One of the pressing problems facing Africa in general and Ethiopia in particular is the widening gap between population growth and food production (UN, 1984; ONCCP, 1985; Mesfin, 1986; World Bank, 1987 and Wahren, 1991).

It is also observed in many parts of Africa (e.g. Somalia, Ruwanda, & Nigeria) including Ethiopia that population pressure is related to declining farm size, farm fragmentation, landlessness and migration (Allan 1965; Fassil 1980; Solomon 1989; Tadesse 1989; McCanna 1990 and NcNamara 1990).

Rapidly growing food and energy requirements aggravated the alarming trend of deforestation and desertification which in turn reduced the productive capacity of African and Ethiopian highland soils. And the shortage of fuel wood, which is the dominant source of household energy, has forced the farmers to use animal dung and crop residue for fuel instead of as fertilizers. (FAO, 1986; McCanna, 1990 and Daniel, 1991 (in Ethiopia); and UNFPA, 1990; Wahren 1991 and IPPF, 1991 (in Africa).

Unemployment and underemployment are other dimensions of the problem of rapid population growth. It is projected that fourteen hundred million new jobs have to be created in the developing region between 1985 and 2025, and 420 million of them are expected to be in Africa (UNFPA, 1990:15). It is obvious that the age structure affects the future size of the labor force. Since about 50% of the population in Africa is below the age of 15, nearly half of those who will enter the labor force are already born (Sadik, 1991:4).

In Ethiopia it was estimated that between 1972 and 1979, 85% of the job seekers, as registered by Ministry of Labor and Social Affair, were not placed (Hayyalu, 1982; 56) and in 1989/90 over 600,000 job seekers excluding expelled soldiers, were registered (Transitional Government of Ethiopia /TGE/, 1991;11). The C.S.A's projection shows that the size of the labor force which was about 18 million in 1985 will reach 33 million in 2005 under any of the fertility decline scenarious and if the present rate of total fertility (i.e. 7.5 children per woman) remains the same the size is expected to be as high as about 68 million in 2025 (C.S.A., 1988b:34).

More over rural-urban migration and urbanization which are partly induced by high rate of natural increase in rural areas, have found to be adversely affecting the already ill-equipped urban sectors / Dwyer 1975 and UNFPA, 1990). The gulf separating the need and / or demand for and the supply of housing units in many urban centers in Ethiopia is ever widening partly due to rapid urban population growth (AAMPPO, 1984; Solomon, 1985; Hadigu, 1988; and Alula, 1989).

Further more, the need for expansion of social services like education and health is dependent on the pace of population growth. Unbridled population growth in Ethiopia has made it increasingly difficult to meet the demand for such services(Dawit, 1989 and Tesfayesus, 1989).

Finally, it is often argued that, though the direction of causation and the mechanism is not clear, rapid population growth aggravates the problem of underdevelopment because the capacity to save and, hence, invest depends partly on the

proportion between economically active and inactive population and on the relationship between growth rate of the population and the economy (Ominide and Ejoigu, 1972 : 117).

High fertility is the prime cause of high child dependency in Ethiopia. It is projected that the age dependency ratio will fall below 100% only after 2025 (if fertility declines gradually) and only after 2015 (if fertility declines rapidly) (C.S.A., 1988). Therefore, although there are arguments in favour of the economic contribution of children to the peasant household, the need to support economically inactive population tends to absorb large proportion of the national income that could be saved and invested. In Ethiopia, because of several other problems, such as unfavorable balance of trads, poor economic policy and backward technology, it has been observed that per capital income, saving as a percentage of GNP, and investment as a proportion of domestic saving declined between 1987/88 and 1990/91 (TGE, 1991:6-7).

It follows from the foregoing rather brief exposition that population growth in Ethiopia is running ahead of the supply of food, job, shelter, (urban), household energy, educational and health services. This indicates that Ethiopian economic development fails to keep pace with rapid population growth.

Therefore, several conferences and researches conducted on population in Ethiopia and other developing countries concluded that the great imbalance between population growth and economic development should be corrected. It appears that

there are three ways by which this can be achieved:-

1. Through development;
2. Through family planning and
3. Integrating development and family planning

The last one seems widely acceptable (UN, 1984). In any case, the specific mechanism through which fertility can be reduced is identified only by thorough understanding of the determinants of high fertility.

This is because, as we have seen earlier, with mortality decline and with that trend expected to continue, the pace of population growth in Ethiopia is determined by the future course of fertility, especially, in rural Ethiopia where mortality though high,has been declining faster than the case in urban areas.

However, though there are a few studies, on levels, trends, and differentials of fertility in rural Ethiopia (e.g. Kebede, 1986; Genet, 1987; Alemtsehay, 1988; Abdulahi, 1989; Assefa, 1990 and Betemariam, 1991), to the knowledge of the researcher, there is still a dire need for further study, in different localities, of the socio-economic, cultural, biological and environmental factors affecting the fertility behavior of the rural population.

Most of these previous studies except a recent one by Hussien, (1992) in Shashemene, have focused on socio-economic and cultural factors paying little attention to the direct determinants of fertility. None of these studies, except a

passing remark by Assefa (1990) have considered the current economic and old age security value of children to parents. We also lack information on husband-wife difference in perceived value of children, and knowledge and attitudes towards fertility regulation. In addition we run short of data on Ethnic specific traditions that support high fertility.

Therefore, the major purpose of this study is to make a modest contribution in filling this gap.

1.2 Background Of The Study Area

1.2.1 Physical Background

In general the Gurage people occupy a portion of the south most range of the central Ethiopia plateau. It lies between 38^0 and 38^0 30E and 8^0N (Shack 1966).

Culturally the Gurage people are bounded on the west, north and east by three groups of the "Galla" (Oromo) people; the Mecha, Tulama and the Arsi; to the south are two sub-groups of the Sidamo people, the Junjero and Kembata (Shack 1966 and Ipcar 1970).

Although the Gurages share essentially a common culture-design in construction of house, pattern of settlement, mode of production and form of economic and social organization (Shack, 1963) the study does not represent the whole Gurage. It focuses on the western Gurages inhabiting two weredas (the smallest administrative unit) in western shewa administrative region (see Figure 1).

The two weredas under study (Checha and Ezha-and-Wollene) are part of the " Sabat Bet Gurage" (Gurage of the Seven Houses or Tribes) that include Ezha, Checha, Aklil, Muhir, Wollene-Worriro, Geyto, Enemore and Enner who speak a sematic language-Gurageina that comprises a slightly different dialect (Lesiau, 1979). These weredas are divided into 117 peasant association(PAS) See Fifgure 1.

The relief varies greatly both in elevation and terrain. Based on altitude Ipcar (1970:26-27), has identified three principle sub-region in the study area. The first one is a high land plateau in the early stage of erosion covering much of Gumer, northern part of Checha, extending upto upper portion of Muhir, Aklil and Ezha (see Figure1).

A lower plateau, commonly referred as a plateau of Atat and Ambuse begins just north of Emdiber and Agena and stretches out to the bank of Wabi river. In between, a transitional slope zone is found.

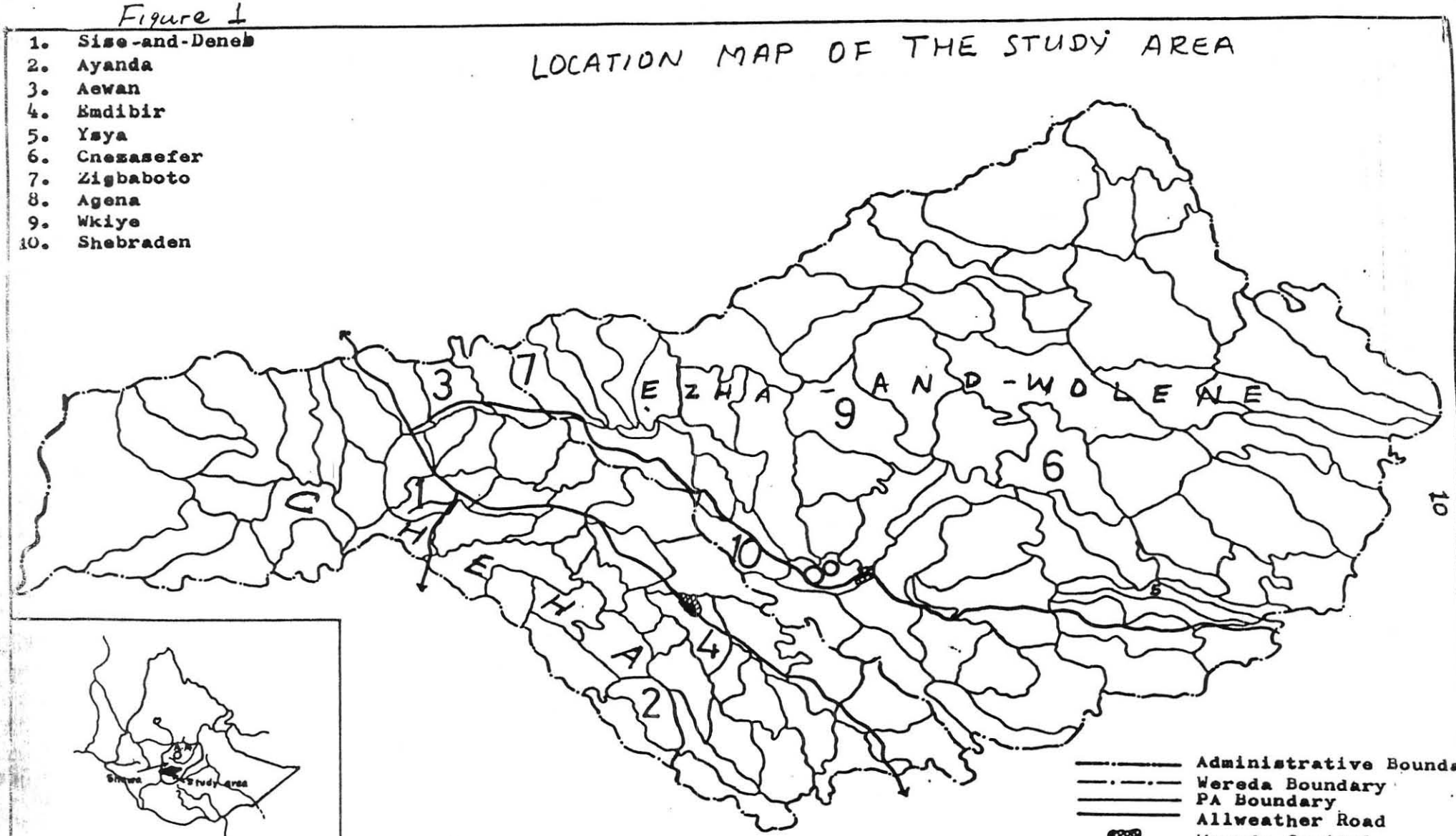
Soils are generally clay loams, red in color, in the middle zone with darker types prevailing in the upper and lower plateaus. Poor soil conditions unsuitable for the growing of grains have conditioned the almost total dependency of western gurage on Enset- Ensete Edulis (Ipcar, 1970 and Shack,1984).

The drainage system in the area is generally dendritic in pattern with several major rivers such as Wabe, Tirer, Winke, Megecha, Chefar and Huluke.

As there is no metrological station in the study area, it is not possible to describe the climate of the study area.

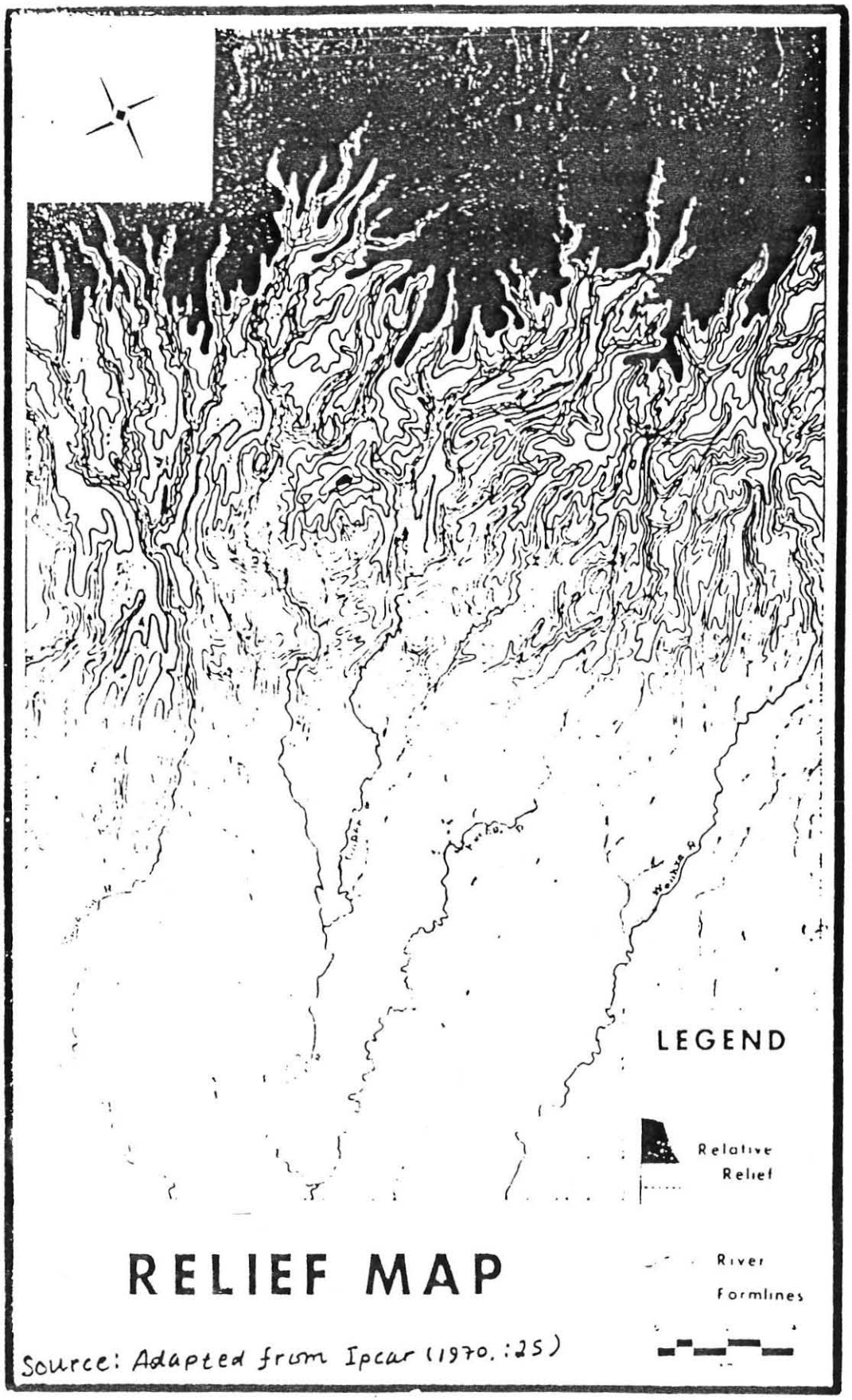
Figure 1

1. Sise-and-Deneb
2. Ayanda
3. Aewan
4. Emdibir
5. Ysya
6. Cnezasefer
7. Zigbaboto
8. Agena
9. Wkiye
10. Shebraden



Source: C.S.A, Mapping Section, 1984

Figure 2



Source: Adapted from Ipcar (1970.:25)

However based on altitude (1200-2500) the climate of the area maybe roughly tabled as subtropical and temperate wet highland (Daniel, 1977 and Ipcar, 1970). Like much of the central Ethiopian highlands, there are two major seasons. A major rainy season called "Zar" extends from early june to late september and a major dry hot season ("Abar") occupies the rest of the year.

1.2.2. Socio-Economic Background

The 1984 population and housing census (OPHCC, 1992:45) puts the gurage population at about 1.9 million (4.4% of the country's population) of which the study weredas, Ezha-and-Wollene and Cheha accounted for 8.8 and 5.5% respectively.

The fertility of Gurage women is among the highest in Ethiopia (OPHCC, 1987; Abdulahi, 1989; Alemseged 1989; Betemariam 1991; and Hussien,1992). For instance, Betemariam (1991:133) found in urban areas of shewa that average parity of the Gurage women at age 45-49 was the highest (6.36) compared to Amhara (4.06) and Oromo(4.82). In Shashemene it was also observed that kebele with highest proportion of Gurage has been associated with highest average parity (5.03) compared to kebeles settled mainly by oromos (4.41) and Amharas(4.6). In urban areas most Gurages were found to have been self-employed, less educated, married early and muslims-all of which are favorable for high fertility.

More over, other historical, socio-economic, and cultural factors seem to contribute a lot to the condition of high

fertility among the Gurage.

Historically, there have been frequent political conflicts (wars) among themselves and with other neighboring tribes such as Kembata, Sidama and Oromo (Shack, 1966 & 1971). The Gurage Settlements which were often raided by the warring Sidamo people and the Oromos for territorial and slave raides have been forced to be nucleated. Shack (1966) further noted that the formation of numerous clans has been the result of the process of immigration of small, perhaps, war liking groups into Gurage land. The Gurage homesteads are composed of agnatic kins, villages formed densely settled home stead, territories composed of kin-based villages from the base for clan based territorial division of Gurage land. The Gurage's strong sense of ethnic identity is a well observed fact (Markakis, 1974).

Although such tribal strifes are not common today, the numerical supremacy of a lineage and /or a tribe is considered as a power among the Gurage. In traditional societies like the Gurage in which economic, political and social life is organized on the principle of kinship affiliations, numerical strength of the clan or extended family is beneficial to its member and therefore high fertility is encouraged.

The Gurage culture supports high fertility in a number of interrelated ways such as early and arranged marriage; high value attached to large family expressed in "Samer" feast (a celebration of the birth of the eight and/ or the tenth child); the very low status of women; the fear by woman of "Anqit" (a condition where every kind of ill - health in her

new home is attributed to remarriage without the consent of the former husband); the very nature of " Enset" cultivation (labor intensive) and the very high parental expectation of child support.

The Gurage parent, especially in rural areas, strongly believe that they are entitled to the labor and the income of their children (whether they are married or not). They try to have the control in material and spiritual ways. First of all, children are broughtup to show highest regard for their parent and taught that the blessing of the parent is a prerequisite for a successful life (Fecadu, 1970). So no one dares, under normal conditions, to be cursed and as a result leads a miserable life. Secondly, since the father controls the inheritance, if the child is not an ideal son, he has no right to inherit the land (Shack, 1966). The failure to inherit the land, the most scarce resource in the Gurage region is not an easy matter to the Gurage boys. There are also all sorts of pressures from peers and clan association on a person who is not upto the expectation of his parents.

Among the Gurages, a large family is a means of diversifying source of household income; some remain at home while others go to urban areas and send money and/or gifts (Fekadu, 1970 and Assefa, 1980).

Moreover, the cultivation of Enset " false banana " that is suitable only to forked digging stick, demands a great deal of labor particularly during plantation and harvest. Thus, children of both sex from an early age (average starting age for female 5 years, for male 7 years) participate in this and

other productive works directly or indirectly. They enable the parent engage in more productive activities by freeing them from monotonous household chores.

Among the Gurage marriage is early (16 year for female) and mostly arranged. If a girl is not married early (unless she is a student) it is a disgrace to the parent and herself; she will be called "an old girl" a psychologically killing phrase, and in most of the cases a father looks for a girl for his son.

The tradition of "Samer" and fear of "Anqit" support high fertility through stabilizing marriage. The "Samer" makes public the fact that marriage is ritually binding. Thus, after "samer" divorce is very rare because it is believed that doing so would offend the deity that legitimized the ceremony. Except the catholics and the protestants (who were very few in number), most muslims and orthodox christians consider "Samer" as a blessing.

That is why of the total 605 women, and 156 men, who had below 8 live born children on the survey date, 54% of women and 62% men wanted to celebrate a "Samer" feast. When they were asked about the kind of "Samer", 60% of women and 75% men replied that they would like to celebrate the birth of the tenth child.

Since the Socio-economic status of Gurage woman is extremely low (man controls almost all of the resources - the land, livestock, food and cash crops, he is considered superior to a woman by the community and he himself feels that way), bearing many children (especially sons) is the only road

towards a successful life. A failure to bear at least one son leads to divorce or the man searches for a second wife. Even with one or more boys, the Gurage man may neglect his wife in favour of a co-wife and can send her away whenever he wants. On the other hand, he has the right to refuse if she wants to leave of her own will.

If she does so without his agreement, she can not remarry unless the husband formally renounces the claim on her. If somehow she remarries, she is said to be "Anqit". Therefore, fear of "Anqit" seems to discourage divorce and reduce wastage of reproductive age and thus increase fertility.

Moreover, the Gurage land is one of the densely populated region in Ethiopia. In 1984, by wereda level crude density varied from 128 in Enemore and Enner to 212 persons per square kilometer in Gumer. An average size of land-holding in 1982/83 was 0.65 hectar in Ezha-and-Wollene and 0.68 hectar in Cheha. (Ministry of Agriculture, (MOA) 1984; and Office of Population and Housing Census Commission (OPHCC), 1985).

In spite of high labor demand, because of formidable ecological constraint (scarcity of arable land) many young Gurages are forced to emigrate to urban areas. So high fertility and, hence, pressure on land appears to be part of the general problem of rapid population growth in the study area.

Therefore, the study of some of the major socio-economic, cultural and proximate factors affecting the fertility of the Gurages whose level of fertility is among the highest, may reveal the determinants of high fertility in the country.

1.3 Review of Related Literature: Proximate and Socio-Economic Factors

The fact that in the least developed countries population growth runs ahead of economic development has recently attracted the attention of not only researchers but also of planners and policy makers. As a result, there exists a large body of research on the determinants and differentials of fertility.

The bulk of the research in this area has been carried out by non-geographers because population geographers have been interested mainly in the study of distribution, spatial mobility and density of population. However, according to some authors, (eg., Jones, 1975; Wilson, 1978; Wood, 1979; Joes, 1981 cited by clarke, 1984 and Clarke, 1984), analysis of the spatio-temporal variation in fertility, mortality and population growth has become the current trend in population geography.

This review focuses on some of the major biological, socio economic and cultural variables that have been generally identified as determinants of fertility in the developing countries particularly in Africa. It is divided into two sections: the first one deals with the most immediate biological determinants of fertility, the "intermediate" or "proximate variables"; and the second one is concerned with the socio-economic factors.

1.3.1. Intermediate or Proximate Determinants of Fertility

The "intermediate" or "proximate determinants" of fertility as a framework for analyzing variation of fertility among populations was originally formulated by Davis and Blake (1956) and later modified by Bongaarts (1978) and Wood (1990).

Davis and Blake (1956: 211-212) have identified eleven "intermediate" variables that are grouped into three major classes: (1) intercourse variables; (2) conception variables and (3) gestation variables.

Bongaarts (1978:107) making distinction between "natural"and "controlled" fertility has provided a list of eight factors or "proximate" variables that are grouped into three major categories: (1) exposure factors; (2) deliberate marital fertility control factors, and (3) natural marital fertility factors. In his later work, Bongaarts (1982) cited by Farooq and Simmons (1985: 71) divided the second one further into two.

Recently Wood (1990: 219) following Bongaart's model, developed a slightly different (emphasized biological determinants and excluded deliberate fertility control factors) framework of proximate determinants consisting of nine factors that are grouped into two: (1) exposure factors and (2) susceptibility factors.

The intermediate or proximate variables have direct bearing on fertility; some may raise while others depress it. However, it is the interplay of all factors that determine the reproductive performance of a given population.

The specific mechanisms through which some of these variables such as marital status, age at first marriage, breast-feeding, post-partum abstinence, perceived economic and security value of children and contraception influence fertility is very briefly discussed in the following few pages.

1.3.1.1. Marital Status Age at First Marriage and Fertility

If all other factors are held constant, marital status (the state of being married, or single, divorced, widowed or separated) and age at marriage affects fertility through determining the length of time spent in a fecund age group (15-49).

Several studies in different parts of the world have demonstrated that the level of fertility varies according to current marital status of female; generally a higher fertility among married women than among all other women has been observed in Sub-Saharan Africa, in the middle-east and other developing countries in Asia and Latin America (eg. Bongaarts, et al., 1984, UN 1984d and 1987).

In Ethiopia, where marriage is almost universal and early, a similar fact is documented by Genet (1987:78) in rural Harrarge and Gondar; Alemtsehay (1988) in rural Wollo and Illubabur; Abdulahi (1989) in Alemaya, Metu and Addis Ababa; Betematiam (1991.) in Shewa; Assefa (1990) in Arsi and Shewa; and Hussien (1992) in Shashemene.

Although the relationship between age at marriage and

fertility varies, among other things, according to the use of contraception, marriage pattern, one's socio-economic position and family size norms; late age at marriage may affect family size by reducing the duration of marriage with in the reproductive span, through shortend fecundity, averting some births and survival of fewer women into advancing ages due to mortality (Chuadhury, 1982:103 and UN, 1984C:9).

In most African Societies, especially, in Sub-Saharan Africa, (where there is no or little use of modern method of contraception) universal and early marriage are the major determinants of high fertility. WFS (1984:14) has shown that the highest percentage of married women aged 15-19 were found in Africa and Asia. In Sub-Saharan Africa, the age at first marriage varies regionally from below 17 years in West Africa to 22 years in East Africa (Bogaarts, et al.,1984:518 and Bahatia, 1984: 59)

In both developed and developing countries including Ethiopia there are findings that support the negative effect of rising age at marriage on fertility (eg. Chaudhury, 1982; Bahatia, 1984; UN, 1984d, 1984c and 1987; Alemseged 1989; Abdulahi, 1989; Groenewold, 1989 and Hussien, 1992)

Consequently, raising the age of marriage is considered as one of the policy options to lower fertility. However, it has been observed that, in populations in which marriage is too early, unless age at marriage is rising beyond the critical interval(13-19 years), where there exists adolescent sterility, there may not be significant change in fertility (UN, 1953 Cited by UN, 1984d). For instance, in Kenya, inspite

of upward change in age at first marriage, total fertility increased from 6.6 in 1950-55 to 8.1 children per woman in 1975-80 (Caldwell, 1981:109). Hobcraft (1985), also pointed out that in countries like Kenya and West Africa, where there is pre-marital sexual intercourse, increasing age at first marriage may not have a substantial impact on fertility.

1.3.1.2. Breast-feeding, Post-partum Abstinence and Fertility

It has long been recognized that breast-feeding (duration, frequency and intensity) tends to reduce fertility not only by lengthening the inter-birth intervals through the production of hormones that suppress ovulation (Bongaarts, et al., 1984: 525 and Guez and Hobcarft, 1990: 91) but also reducing infant/child mortality through protecting disease (Thapa and Potts 1990:15).

Analysis of World Fertility Survey (WFS) data from 38 developing countries (12 from Africa, 13 from Latin America and Caribbean, 13 from Asia and Oceania) by UN (1987:110) has shown that mean duration of breast-feeding varies widely both within and between regions. Women in Africa and Asia and Oceania breast-feed on average 18.4 and 18.2 months respectively, whereas in Latin America and caribbean it is about 9.7 months. Within Africa the range is between 15 months in Morocco and Tunisia and 21 months in Lesotho. In Asia and Oceania, it ranges from 10 months in Fiji and Malaysia to above 30 months in Bangladesh and Nepal. In Latin America and the Caribbean mean duration of breast-feeding

varies from 5 months in Costarica to 17 months in Haiti.

After every birth, if there is breast-feeding, it is found that ovulation and hence menstruation is temporarily blocked. Post-partum amenorrhoea lasts on average about two months for non-breast-feeding women and increases to roughly 60 to 75 % of the average duration of breast-feeding (Lesthaeghe et al., 1981:7).

However, though duration of amenorrhoea is generally related to the length of lactation, the relationship is not always linear. For example Lesthaeghe et al.,(1981:8) noted that extending lactation beyond two years may not increase duration of amenorrhoea very much. This is partly because intensity and frequency of suckling decline as weaning approaches (Bongaarts et al., 1984 and Gray, 1981).

Several studies in different parts of the world have demonstrated the nonlinear association between duration of lactation and post-partum amenorrhoea. For example, UN (1987:117) found out that using current status data, in Sudan, where mean length of breasting was 14.9 months, post-partum amenorrhoea was 11.8 months whereas in Tunisia the former was 18.4 months and the latter 7.8 months. A similar discrepancy was found also in Ethiopia by Hussien (1992: 134) in Shashemene where a kebele (the smallest administrative unit in urban areas) with the 2nd highest (18.5 months) mean duration of breast-feeding was observed to have the lowest average length of amenorrhoea (7.5 months).

Post-partum sexual abstinence associated with breast-feeding or other cultural mores can also depress fertility if

it is strictly adhered to.

The ways of organizing the taboo, the degree of social control and the severity of the sanctions in the case of violation vary. In some populations, the taboo is seriously imposed through, for example, social sanctions against women who fail to observe it (in Yoruban society of Nigeria, Caldwell and caldwell, 1981:86) or through physical separation of the spouse after child birth, like among Ewe of Togo (Kumekpor, 1975, cited by caldwell and caldwell, 1981:84).

Post-partum abstinence is useful for lengthening temporary post-partum sterility, when its duration exceeds either post-partum amenorrhoea or breast-feeding. Its length varies widely from place to place. For example, among the sub-Sahara African countries considered by UN (1987:121), average duration of post-natal sexual abstinence was found to be shortest in Tunisia (2.2 months), Sudan (2.9 months), and Lesotho (17.1 months). Mean duration of full breast-feeding was longer than that of abstinence and amenorrhoea among the former while it was much shorter among the latter ones.

Though the major purpose is said to be for maintaining maternal and child health, empirical findings in Africa, Asia and Latin America have clearly shown the fertility depressing effect of prolonged breast-feeding and post-natal sexual abstinence (Lesthaeghe, et al., 1981: 4 and Bongaarts, et al., 1984: 530). It was estimated that in the absence of lactation and postnatal abstinence, the total fertility would have increased by 25% in Latin America, 50% in Asia and as high as 78% in sub-Saharan Africa would have rise from 6.6 to 11.4

children per woman (Bongaarts, et al., 1984:535). In Ethiopia also lactation is found to be the most important method of birth-spacing (Elias, et al., 1970; Kebebew, 1973; Abdulahi, 1989; Dahl-Jorgensen, 1991 and Hussien , 1992).

Therefore, the principal proximate determinants of the levels and differentials of fertility in sub-Saharan Africa are identified as lactational amenorrhea due to breast-feeding, decreased exposure to conception due to post-natal sexual abstinence and pathological sterility; and spontaneous abortion and natural sterility as minor ones (Lesthaeghe et al., 1984, cited by Bongaarts et.al., 1984:517).

1.3.1.3. Modern Methods of Contraception and Fertility

The use or non-use of effective means of modern contraception is the strongest determinant of fertility. It is therefore regarded as the surest means of regulating population growth.

In spite of the increasing number of developing countries directly or indirectly supporting access of their people to modern means of contraception (UN, 1984c: 7; UNFPA; 1990: 13 and Sadik, 1991:5), the situation in Sub-Saharan Africa has been least encouraging; because, although by 1990 more than half of the governments in this region including Ethiopia have perceived the alarming population growth rates, the knowledge and practice of modern contraception is extremely low (IPPF, 1991: 27). The contraceptive prevalence rate in Africa

increased from a low level of 5% in 1960-65 to only 17% in 1990; in sub-Sahara Africa it was only 10% (UNFPA, 1990: 37 and Sadik, 1991: 27). Therefore, the none-use of modern contraception is a significant determinant of fertility in sub-Saharan Africa.

The situation is still dismal in rural Ethiopia where the population has very little or no knowledge of modern contraceptive methods (Change 1974; Hailegebrael, 1973; Fassil, 1979 and Dahl-Jorgensen, 1991). Even in urban areas, in spite of the knowledge and positive attitude towards the use of modern methods of contraception, the practice is quite limited (Balsvick et.al., 1970; Kebebew, 1970, & Groenewold 1989). On the whole, it is one of the lowest in sub-Saharan Africa with estimated rates of 0.7% in 1980, 2.5% in 1988 (Seyoum, 1989:18) and 4% in 1990(C.S.A, 1991: 43). It is evident, therefore, that one of the causes for the current persistence of high fertility in Ethiopia is the very low level of contraceptive use.

1.3.1.4. Value of Children and Fertility

The value of children is defined as "hypothetical net worth of children with positive values (satisfaction) balanced against negative values (costs)." (Arenold, et. al., 1975: 2)

It is often argued that parents in peasant societies want large family for several reasons, one of which is that children are valuable to them in many respects. And this is considered as a barrier to the acceptance of family planning

(Mahmoud cited by Muller, 1976 and Boserup, 1985).

There exist various kinds of positive and negative social, economic and psychological functions of children to parents (Arnold et. al., 1975; Repetto, 1976 and Nag, 1981). Of the five positive and five negative functions of children to parents, Arenold, et al.,(1975) have found that the rural people in six countries studied stressed the economic benefit and security and economic cost as primary; and family cohesiveness and family cost as secondary. Thus, as this is a rural study the economic and security value of children to parents and the effect it has on fertility can be considered.

1.3.1.4.1 Economic Value of Children and Fertility

The contribution of children to peasant household can be either in the form of labour which could be used in rendering services and in economic activities or supply of money-sale of labour, gift and remittance.

According to Chaudhury (1982: 8-9) and Ahmed (1984: 89-90) the economic contribution of children may be estimated, among others, by assessing production and consumption by children, the effect of children on the average household income and the distribution of work among members of the household.

The analysis of work contribution of children in rural areas of Ghana (Opping 1973, cited by Caldwell, 1982:47) Bangladesh (Cain, 1977:213), and Nigeria (Caldwell, 1982: 47), has shown that on average, children enter into useful

household and more productive tasks at early age between 4 and 7 years. In Bangladesh,it has been observed that as the child age increases so does the working time. For instance, children aged 4-6 years work approximately one fifth as long as adults and the work time increase to one half by age 7-9, to three quarters by age 10-12. And at age 13 and above, children work on average as long as or longer than adults (cain, 1977: 214).

Regarding the net economic return from children, there are different findings. Mueller (1976) investigated to what extent in peasant agriculture (India and Taiwan) male and female children contribute to the household expenditure, earnings and savings at various ages and for various family size. She concluded that, in peasant societies, children from birth to the time of their marriages tend to produce less than they consume and hence they have negative value.

However, her conclusion is strongly challenged by Cain (1977); Caldwell (1982) and Chandhury (1982) on the grounds that the data and the approach she used were deficient. Caldwell argued (1982:13) because of the difficulties of obtaining money data from peasants, Mueller depended on a wrong approach-labour inputs into the growing of staples. But this underestimates children's labour contribution because they put high labour in non-productive activities and hence free adults to participate in more useful works. Chaudhury (1982:114) also supported this argument and added that the official labour statistics used by Mueller under estimates the age at which children enter into the labour force.

It has been observed that children produce more than they

consume at age eleven in Bangladesh (Cain, 1977: 210) and at age 15 (if they do not go to school) in Nigeria (Caldwell, 1982:108). Most of the respondents aged 50 years in Nigeria said that they have received back more than they spent on children. That is why, the relationship between child labour force participation and fertility has been found to be mostly positive (eg., Arnold, et al., 1975; Repeto, 1976 and Cain; 1977).

1.3.1.4.2. Old Age Security Value of Children and Fertility

Irrespective of the fact that whether a child brings in a current positive or negative return, the old age security value of children to parents in peasant societies, where there is little or no institutional support for the aged and/or disabled and where women are economically dependant on men, is considered to be one of the most significant motives for desiring and having large family.

A cross-cultural study (in five south east Asian countries and U.S.A. Hawaii) by Arnold, et al.(1975) has revealed that couples who want children for current economic and future security reason (rural and urban lower class) tend to have higher actual and desired fertility than those who want children primarily for psychological reasons (urban middle class). Repetto (1976: 80) also has given a historical, attitudinal and economic evidence for the effect of change in the opportunity for children to contribute labour services to the household economy or their use as insurance in the old age

on fertility. Moreover, in African countries such as Nigeria and Ghana it was observed that respondents in rural areas considered the old age security value of children as the most important reason for having them (Cldwell, 1982).

However, a study of 357 ever married men in rural India by Valssoff and Valssoff (1980) has questioned the old age security motive for having large number of children. They argued that because of the time gap between fertility decision and security received from children in the old age, it is doubtful whether the present value of security benefits could be large enough to affect fertility behavior. They added, that the observations that some older men (30%) who were living with their children had little or no leisure time, that some village men send off some of their sons to urban areas; and that large proportion of dependant men (11 out of 18) felt that they had provided their parents with better support than they received from their sons are all inconsistent with old age security motives. Moreover, they contend , the fact that wealthier village men expected to be more secured in their old age than less wealthier ones suggest that economic resource, not abundance of sons, are relevant factors that determine security in the old age.

On the other hand, Nugent and Datta (1984: 507-509) strongly argued against all these propositions. Regarding the time gap they pointed out that in many developing countries including India the large husband-wife age difference and the shorter life expectancy of men make shorter the period between fertility decision and dependency. Besides, sending off some

sons to other areas is a means of diversifying source of income modified by old age security. It can be added that valssoff and valssoff (1980) seem to underestimate the value of remittance. They further contended that wealth can not be a substitute for a help of sons.

Moreover, in his review of literature, Nugent (1985:75) indicated that there are sufficient evidences in rural and urban areas of both developing and developed countries that support the inverse relationship between social security proxy variables and fertility measures. He added, citing Matew (1975) that a review of 173 KAP surveys conducted between 1950-70 in various parts of the world has made it clear that evaluation of children as a source of family strength and economic anchor of the family and son as a security against old age, was the major motive for desiring children.

The old age security motives for having large number of children become more significant, according to cain (1984:436) in a setting with "harsh climate of risk" where other more effective forms of insurance do not exist. In his comparative study of villages in Bangladesh and India of their fertility levels, cain (1984) observed that in the former where other risk-copping institutions (credit, extended family and female labour force participation) were found to be weak, sons have been considered as the only form of insurance. Thus, it is suggested that under uncertain and insecured social and economic life in peasant societies couples take high fertility as an efficient strategy to strengthen their social and

economic position.

Nevertheless, the insurance value of children against risk is not welcome by Nungent (1984:84) and Robinson (1986:291) because they contended that children are liabilities during risk or hazardous events (they restrict Mobility) and the amount of labour required during such situation as flood and civil disturbance may exceed the capacity of a household regardless of its family size. Robinson (1986:294) further argued if according to cain high risk (uncertainty of future income streams) is directly related to economic value of children and hence the demand for them the demand and fertility of parents with greatest present security and protection from economic risk would have been lower than the less secured ones. But there are studies in Bangladesh that showed positive relation between fertility and economic status.

Finally, the positive relationship between fertility and the need for old age security seems to be supported also by Demny (1987) and Simon (1988) who investigated the policy options for raising fertility from below replacement level in the west. It appears that they agree on the idea that if parents expect some amount of return from investment on children during old age, they tend to raise the size of their family.

It follows from the discussion that has been made so for that in a society where the economic and social environments are uncertain, and where there is lack of institutionalized support to the aged and disabled and where the cost of child

rearing is low with the child providing current and future help (material and emotional) to the parents, it is rational in the part of the couple to desire and have as many children as possible. Therefore, as chaudhury (1982) argued, unless acceptable alternatives to children as a source of security are found it is unlikely that couples accept any programe designed to reduce high fertility.

1.3.2. Socio-Economic and Cultural Factors and Fertility

Socio-economic and cultural factors affect fertility only indirectly through the proximate variables. In this section an attempt is made to shed light on the theoretical and empirical evidences regarding some of the major socio-economic and cultural variables that have been generally considered as determinants of fertility in the developing world. These include education, infant mortality, socio-economic status of the peasant household, religion, ethnicity, and Types of marriage.

1.3.2.1. Education and Fertility

Educational attainment of the parents is supposed to have mainly indirect effect; but sometimes it has direct and joint (interaction) influences on fertility (Olusanya, 1971; Michael, 1973; Holisinger and Kasardo, 1976; Cocherane 1979; Chaudhury, 1982; Mosely, 1982 and UN, 1984a and b and 1987).

Holisiger and Kasarda (1976: 156-163) and Chaudhury (1982: 86-88) have stated that the indirect effect of the level of education that tends to reduce fertility work through delaying marriage; increasing knowledge and practice of modern methods of contraception; increasing income (long term effort); aspiration for upward mobility; employment of women in the modern sector; declining value but increasing cost of children, improving husband-wife communication and the health status of the parents and children and increasing sense of self-sufficiency.

Moreover, education has been found to directly affect a broad spectrum of psychological attributes including freedom from tradition, heightened aspiration, values concerning ideal family size, contraception and other modern values that motivate couples to restrict the size of their family (Holisinger and Kasarda, 1976; Mosely, et.al., 1982 and UN, 1987). Along with these direct and indirect impacts, education is expected to operate jointly with other variables like urbanization and industrialization (Cocherane, 1979).

Although the paths through which education acts on fertility are complex and numerous, the review is restricted to discussing the relationship between educational level of women and fertility through the use of contraceptive methods, age at marriage, women employment, infant/child mortality and breast-feeding.

Many research findings in different parts of the world have evidenced the fertility-limiting effect of rising level

characteristics including employment of husbands and wives , no difference in the net effect of education on fertility. This led them to suggest that female education, irrespective of other socio-economic variables, is one of the most important determinants of fertility.

Education is also believed to affect fertility through health status of parents and children. Education would seem to enhance the health of parents and children via better knowledge of hygiene and nutrition, better access to modern medicine, and adequate food supply and better pre-and post-natal care. Thus, improvement of child health due to mothers' education reduces the positive effect of infant/child mortality on fertility that will be seen in the next section. Maternal education has been shown to be negatively related to infant/child mortality (Caldwell, 1979 and others).

However, in countries with low level of development, maternal education has been found initially (at least at primary level) to have positive effect on fertility because of protection against fecundity impairment, erosion of traditionally long period lactation and post-natal sexual abstinence, and reduction of practice of polygamy all of which have fertility-suppressing effect. It becomes negative only later, when the use of contraceptive fully counterbalances the positive effect (Caldwell, 1982: 107 (Nigeria); Mosely, et.al., 1982: 48 (Kenya);Cleland and Rodriguez, 1988: 44 (in 11 of 38 developing countries considered); Rahman and Phillips, 1988 (Bangladesh)

Bailey,1989: 286 (rural Sierra Leone); Johnson and Elmi, 1989 (Somalia).

It follows from the preceding presentation that, generally, there are two main types of education-fertility relationships: curvilinear-indicating educational "threshold" prior to which fertility either remains stationary or increases (mostly observed in less developed countries) and monotonic-without educational "threshold" commonly found in more developed countries (Cocheran, 1979; UN, 1984 a and b; and UN, 1987).

In Ethiopia, there is a general inverse association between the level of women education and fertility (C.S.O. 1970 and 1979, cited by Abdulahi, 1989; Alemu, et.al., 1970; Genet, 1987; OPHCC, 1987; Abdulahi, 1989; and Betemariam 1991,. Kesteren and Markos, 1989 and Assefa 1990)

1.3.2.2. Infant/Child Mortality and Fertility

Both theoretical and empirical studies have shown that there are at least five possible paths through which infant child mortality affects fertility. These are (1) biological effect; (2) replacement effect; (3) insurance effect; (4) community effect; and (5) dependency burden effect (Taylor, et al., 1976; Perston, 1978; Ruzicka, 1978; Olsen, 1980; Chaudhury, 1982; Sufian and Jonson, 1989; and Chandran, 1989).

The "biological" effect, which is the strongest and the most direct, especially, in a non-contraceptive but widely breast-feeding population, is hypothesized to operate through

shortening of duration of breast-feeding that leads to a more rapid resumption of ovulation and hence frequent pregnancy. This hypothesis has got several empirical supports. (eg., Ruzieka, 1978; Boldion, 1981 cited by UN, 1984a; and Chandran, 1989).

Studies by Olsen (1980) and Boldion (1981) cited by UN (1984a) validate the "replacement" hypothesis (where additional births are attempted in order to replace deceased children). But Chaudhury (1982), reviewing some studies on the issue, indicated that in the absence of perfect contraception and specific reproductive goal, replacement has limited macro-demographic impact on fertility.

Likewise, the "insurance" or "child survival" hypothesis that posits realizing high mortality parents may bear larger number of children than they would actually desire (Taylor, et.al., 1976) seems to be empirically unsettled. Although some studies (eg., Adlanha, 1973 (Turkey) cited by Suffian and Jonson 1989 and Cldwell, 1982 (Nigeria) found supportive evidence, a similar study in rural Bangladesh did not validate the hypothesis (Suffian and Jonson, 1989).

As regards community effect, it is commonly proposed that on the basis of the level of mortality, a society may develop either a pronatalist or anti-natalist norm that tends to increase or decrease fertility (Ruzicka, 1978). However, it has been observed that not all high or low mortality societies develop such norms (Chaudhury, 1982).

The postulated negative effect of child dependency burden (i.e., falling infant/child mortality increase child

dependency burden that may stimulate fertility decline) also appears to be empirically doubtful because, in spite of declining infant/ child mortality in many less developed countries, fertility has remained either constant or even has been in some cases increasing.

The gross positive association between infant/ child mortality and fertility is the most consistent finding in the literature. (eg. Friedlander, 1978; UN, 1979 (Africa); Un, 1984c; UN, 1987 (developing countries), and Chowdhury and Becker, 1990 (Bangladesh) and C.S.A., 1984; Tesfayesus; 1985; Kebede, 1986; Genet, 1987; Alemtsehay, 1988 and Abdulahi, 1989 in (Ethiopia).

Therefore, reduction of infant/ child mortality is commonly recommended as a policy option for decreasing high fertility.

1.3.2.3 Socio-Economic Status of the Household and Fertility

A combination of various indicators have been used by social scientists to measure socio-economic status of the household. For example, education, occupation, source and amount of income, ownership and size of landholding, type of residence (urban/rural), characteristics of housing, material possessions, social participations etc. (eg., Warner, et al., 1949 and hollingshead, 1975 cited by Hopkins and Stanley, 1981; Driver, 1963; Tuladhar, et al., 1982; Nassim, et al., 1987 and Abdulahi, 1989).

The first hypothesis appears to be empirically more well founded than the second one (eg. Stys, 1957 in Pland; cited by Abdulahi, 1989; Driver, 1963 in India; Khuda, 1977 in Bangladesh cited by Robinson 1986; Stoeckel & Chowdhury, 1980; Sarma, 1985 in India; Liberman and Monteverde, 1985 in Turkey and Abdulahi, 1989 in Ethiopia (Alemaya and Metu).

There is, however, disagreement on the direction causation. It is argued that the effects could as well be from fertility to land (Simon, 1976: 54 and Cain, 1985: 8). They suggest that large family can stimulate the need to acquire more land. On the other hand, Mosena and Stoeckel (1972) cited by Stokes et al., (1986: 310) have doubts on reverse causality because they have contended that except at farm level land is fixed at village level.

1.3.2.4 Religion, Ethnicity and Fertility

1.3.2.4.1 Religion and Fertility

"Religion prescribes a code of life, refers to a system of beliefs, attitudes and practices which individuals share in groups, and through this orientation towards life and death is supposed to affect one's fertility behaviour". (Chaudhury 1982: 114).

Differentials in fertility among religious groups are expected to arise from variations in intermediate variables which are in turn determined by differences in the norms about intermediate variables and family size (Chaine, 1981 cited by Genet 1987: 69).

The notion that Islam as a pronatalist religion favours high fertility is substantiated by several studies (eg., Zikry, 1963 (urban Egypt); Kirk 1967 (Muslim North African Countries) cited by Alemtsehay 1988; Goldstein, 1970 (Thailand); ESCAP, 1989 (Bangladesh and Pakistan). In these studies Muslim fertility is found to be higher than those of non-Muslims.

However, the findings are not all unindirectinal. Some studies have shown no difference in fertility between Muslims and non-Muslims, or lower fertility among the former. For instance, Zikery (1963: 246) in rural Egypt found almost no difference in fertility between Muslims and Christians. Fertility surveys in Cameroon and Nigeria have recorded lower fertility among the muslim population (WFS, 1983 and 1984). But the differences were attributed to variation in incidence of childlessness.

Therefore, it appears from the foregoing inconsistent findings that the most important differentials in fertility among various religious groups are socio-economic factors.

1.3.2.4.2 Ethnicity and Fertility

Ethnic composition is considered to be one of the prominent socio-cultural determinant of fertility. Ethnic variations in fertility are usually a reflection of accessibility or deprivation of the most direct socio-economic factors like education, employment, occupation, health, etc. and cultural differences in intermediate variables.

Differentials in fertility between various ethnic groups living in a similar economic and environmental conditions have been observed in different part of the world particularly in Africa, (eg. Gaisie, 1972 in Ghana; UN, 1979 in various African countries; Abeykoom, 1987 in Sri-Lanka and Lesthaeghe and Elens, 1989 in seven sub-Saharan African countries).

In Ethiopia differential fertility studies and others have clearly shown the existence of ethno-religious variations in the level of fertility (eg., Kebede, 1986; Genet, 1987; OPHCC 1987; Alemtsehay, 1988; Alemseged, 1989; Abdulahi, 198; Asefa, 1990; Betemariam 1991, and Yacob, 1992). All of these studies have revealed that fertility is higher among Muslim women than among christians except the study by Betemariam (1991) in Shewa who found the highest fertility among Protestant-Christians.

Findings on fertility differentials by ethnic groups are not, however, conclusive. In rural areas of Arsi (Kebede, 1986) and Harrarghe and Gondar (Genet, 1987) fertility amongst Oromo Muslim was found to be higher than that of Amhara-Christians. But in rural Wello & Illubabor the reverse was true (Alemtsehay, 1988). Abdulahi (1989) using 1978 data for Addis Ababa found that fertility was highest among the Gurages followed by Oromos and Amharas. The census data of 1984 (OPHCC, 1987) in Addis Ababa showed that fertility was highest among Dorz followed by Aderes, Gurages, Wolaytas, Tigreans, Oromos and Amharas. But Alemseged (1989) comparing three ethnic groups (Gurage, Oromo and Amara) in Addis Ababa observed that fertility among the latter was the lowest but

there was no significant difference between the first two groups. A more recent study by Betemariam (1991) in Shewa region has confirmed the lowest fertility amongst Amharas but the highest fertility was recorded for Welaytas followed Hdiyas, Kembatas, Oromos and Gurages in rural and in the whole region. In all urban areas, however, the Gurages had the highest fertility.

The observed ethno-religious differences in fertility may be attributed to the variation in the proximate determinants and socio-economic variables. For example, in Addis Ababa the signulate manage at marriage was found to be lowest among Muslims and highest among Orthodox Christians; marriage rate was also observed to be highest among Muslims and lowest among Orthodox Christians.(OPHCC, 1987: 23). In addition childlessness has been found to be highest among Amharas (Ababte and Morgan, 1984: 544).

1.3.2.5 Types of Marriage and Fertility

Polygamy (a marriage in which a man has more than one wife at a time) is prominent in Africa due partly to surplus of women generated by a difference in ages at first marriage of men and women and widows usually remarry to an already-married kinsmen of their deceased husband (Goldman and Pebley, 1988: 222).

At individual level polygamy appears to reduce fertility, though it is not always true. For example, Lorimer (1958: 27) and Dorjam (1959) cited by Shaikh et al., (1987: 57) found in African countries that polygamy is associated with reduced

fertility. Recently WFS data for Senegal, Benin, Cameroon, Ghana, Keneya, Sudan, Lestho and Mauritania showed that mean number of children ever born to women aged 40 years and over was higher among women in monogamous unions than among women in polygamous marriages (UN, 1987: 332). Besides, in rural Bangladesh, Shaika, et al. (1987:55) found similar results. However, another study in Senegal, Ghana and Cameroon revealed that the fertility difference between these two types of marital union was very small (Pebleyand Mubugua, 1989: 358).

Several possible explanations have been suggested for the observed differences in fertility between these two forms of marriages. For instance, polygamous marriage is expected to be characterized by lesser frequency of coitus due to older husbands and lesser degree of privacy; longer observance of postpartum sexual abstinence; higher incidence of sexually transmitted disease and hence sterility and favoritism Romaniuk, cited by UN, 1987; Shaikh, et al., 1987 & Pebley & Mbugua 1989).

1.4. Objectives of the study

The major objective of the study is to assess the influence of socio-economic factors on roximate variables and hence on fertility in rural setting Cheha and Wolene weredas (West Shewa).

The specific objectives are:

1. to analyze the degree and direction of association between

a) the socio-economic factors (education, religion, economic status and child mortality) and the Proximate variables (marital status,types of marriage, age at first marriage, duration of marriage, frequency of marriage, incidence of spousal separation, breast - feeding, post-partum sexual abstainence, perceived economic and old age security value of children knowledge and attitude towards the use of method of family planing

b) the selected proximate determinants and fertility (children ever born);

c) the selected socio-economic factors and fertility;

2. to assess the combined and independent effect of the proximate as well as the socio-economic factors on fertility;

3. to examine couple's knowledge, attitude and practice of method of family planning;

4. to investigate the spatial variation of fertility and find out possible explanations; and

5. to point out the policy implications of the study.

1.5. Hypothesis

Based on the review of literature and objective of the study the expected direction of relationships between the dependant variable (children ever born - CEB) and the explanatory variables are out lined below.

A. Children ever born (CEB)is positively associated with

1. child mortality (number of children died at age below 6 years) (NCD6)
2. Duration of marriage (DUM)
3. Christianity (REL)
4. Monogamous union (FM)
5. Economic Status of the household (ESS)
6. Socio-economic reasons for having children (TRCHZ)
7. Current marriage (MR)

B. children ever born (CEB) is negatively related to

1. Age at first marriage (AFM)
2. Level of women's formal education (LFE)
3. Duration of partial breast-feeding of the penultimate child (DBF)
4. Incidence of spousal separation (ISS)
5. Frequency of marriage (NTM)

1.6. Significance of the study

There is growing awareness in the part of policy makers and planners regarding the impact of rapid population growth on the socio-economic development of the country and the need for integrating population variables and development. One of the outcome is the draft National Population Policy which aims, among others, at reducing high fertility in Ethiopia (Arowllo, 1990)

Therefore, this study is thought to make a modest contribution in the following areas:

1. It may help us understand better the specific paths (mechanism) through which the socio-economic factors affect fertility of the study population.

2. The empirical knowledge gained may be useful in improvement and implementation of the draft National Population Policy with specific reference to the study population;

3. It may provide us with important policy relevant information - whether there is a potential demand for family planning services in the study area;

4. In multi-ethnic society like Ethiopia the success of any population policy aiming at reducing the rate of population growth depends to a large extent on the knowledge of ethnic

specific traditions that favour high fertility. The study will attempt to provide such information; and

5. In a country where males play a dominant role in economic, social, political and religious life of the society (particularly in rural areas) the knowledge of the attitude of husbands towards large family and fertility regulation is essential in devising a specific action programe to reduce high fertility.

2.1 Selection and Measurement of Variables

2.1.1 Dependent Variables

In measuring fertility as a dependent variable (Y) two indices are used; (1) number of children ever born (CEB) and (2) recent fertility, children ever born in the last five years(RCEB).

Both of the measures were organized from the responses to the relevant question set in the questionnaire. Children ever born, although it suffers from omission and/or misreporting of live births, (especially by older women) is selected as a dependent variable because it is considered meaningful for assessing the effect of different factors on fertility; it has no time reference errors and it is easy to collect the data.

However, still another problem related to the use of life time fertility is the existence of temporal difference between the occurrence of birth and the working of some explanatory variables like socio-economic status indicators. To minimize the problem according to Farooq and Simmons (1985), number of children ever born in the last five years (though its reliability depends on the accuracy of reported age of live birth), was used as an additional dependent variable. RCEB was obtained from birth history data.

2.1.2 Independent Variables

Three sets of independent variables, (proximate, socio-economic and knowledge, attitude and practice of contraception (KAP) were considered in this study. The designation,

definition, means and coefficient of variation of these variables are shown in Table 2.1. It is evident from the Table that, as explained by coefficients of variation, the socio-economic factors- LFE, TLU, ESS, PCD, NCD 6, are more variable than the proximate determinants except DPPSA, and PALFS.

TABLE 2.1

Definitions, means and coefficient of variation of the variables include in the study

VARIABLE SYMBOLS	DEFINITION	MEAN	COEFFICIENT OF VARIATION
Dependent			
CEB	Number of children ever born alive	4.46	59
RCEB	Recent CEB, number of live births in the last 5 years	1.77	88
INDEPENDENT			
A. Proximate Variables			
AGE	Age of woman in single years	33.11	24
DUM	Duration of marriage in years	16.20	52
AFM	Age at first marriage in years	16.80	27
MR	Martial status, 1 if the woman is currently married, otherwise 0	0.94	30
LFBFL2	Duration of full breast feeding of the penultimate child in months	4.46	43
DBF	Length of partial breast feeding the penultimate child in months	24.81	35
TRCH2	Ranks on the most important reason for having children, 0 emotional 1 socio-economic	0.55	107
PALFS	perceived advantage and disadvantage of large family, 1 if woman said advantageous ,0 otherwise	0.85	129
NTM	Number of times married	1.20	42
LPPA	Length of postpartum amenorrhoea in months	16.72	45
FM	Type of martial unions; 0 if a woman is polygamously married, 1 monogamy	0.90	35
DPPSA	Duration of postpartum sexual absence in month	3.50	186
ISS	Incidence of spousal separation in the last 5 years (for a consecutive six months) 0 if ever separated, 1 otherwise	0.90	44
B. Socio-Economic Variables			
LFE	Level of women's formal education; 0, no formal schooling; 1, 1-6 grades, 2, 7 and above	0.18	267
REL	Woman's religion, 0 if a woman is muslim; 1,if a woman is christian	0.70	67
ADU	Area of dwelling unit(s) in square meter	25.00	37
TLU	Tropical livestock unit	1.95	103
ESS	Economic status scaie; o, low; 1, high	0.23	174
NCD6	Number of children died before age six	0.51	202
PCD	Proportion of children died	0.14	154
C. KAP Variables			
KFP	Knowledge of methods of family planning; 0 if a woman ever heard at least one method; 1 other wise	0.56	91
AFP	Attitude towards family planning; 0 if the woman approves the use of method of family planning; 1, otherwise	0.91	149
KFLBF	Knowledge of fertility limiting effect of prolonged location 0, if a a woman have ever heard of it; 1 otherwise	0.87	78

2.2 Sampling Design and Sample Size

2.2.1 Sampling Design

In this study two types of sampling designs are used, namely purposive sampling and a two stage stratified random sampling. Among the four weredas (i.e. Ezha- and Wollene, Cheha, Gumer and Enemor-and Enner in which the western Gurages are living, the first two are purposely selected for the following reasons;

1. for comparison:- To assess the spatial variation in fertility by accessibility to socio-economic services, such as hospitals, family planning services, high schools and nearness to town;
2. to minimize the number of languages in to which the questionnaire should be translated and
3. accessibility.

The second one involves the selection of peasant association and households in the first and second stages respectively.

The population of ever married women aged between 15 to 49 years and currently married men formed the target populations for the study. Since there was no data on the total number of the population, the lists of households in each peasant association were used as a sampling frame and hence the household is the ultimate sampling unit that served as a means of locating respondents.

2.2.2 The Selection of Households and Sample Size

Because of resource constraints (money and time), the large number of variables to be analyzed and the homogenous nature of the rural population, (Kish, 1965 and Som 1973) a sample size of about 11% is considered to be sufficient for the study.

Thus, in the first stage of stratification from 117 peasant associations (here after will be abbreviated as PAS) i.e. 53 in Cheha and 64 in Ezha-and-wollene weredas, 8 of them (3 from cheha and 5 form Ezha-and-wollene weredas) were sampled with probability proportionate to size (size being the number of households obtained from the 1984 population and housing census), and two PAS (Agena and Emdibir) one from each wereda, were purposely selected for comparison. The proximity of Agena and Emdibir to the adminstrative capitals of the respective weredas where there are clinics ,family planning survices,Junior and Senior Secondary High Schools and periodic market is consider to affect women's socio-economic background.

In the second stage from an updated lists of households in each PA based on a sampling interval of 11%, a systematic sample of households (with a random start) were drown. That is, with sampling fraction of 1:9 (100/11), a number between 1 and 9 was randomly selected (it was 5) then after every 9^{th} household was included in the sample. The sample of currently married men was not, however, selected in strict random way.

The interviewer were simply instructed to interview 16 currently married husbands /whose wives were interviewed / in each PA.

The reported and sampled number of households and actually interviewed ever married women and their currently married husbands are shown in Table 2.2.

TABLE 2.2

Reported and sampled Number of households and Number of Interviewed women and Their husbands by PAS, weredas and total, Cheha and Ezha-and-Wollene wereda, 1993.

PAS and WEREDA	Reported No of House-holds **	Sampled No. of house-holds	Number of interviewed women	Number of interviewed men
SISE- and DENEB	446	49	43	16
AYANDA	564	62	57	16
ARWAN	473	52	50	16
EMDIBIR*	1355	149	142	16
CHEHA WEREDA	2838	312	292	64
YASYA	546	60	56	16
ZIGBA.B.	518	57	57	16
CHEZA.S.	736	81	74	16
AGENA*	491	54	47	16
WKYE	718	79	78	16
SHEBRADEN	691	76	75	16
EZHA-AND WOLENE	3705	407	389	16
TOTAL	6543	719	681	160

Source: ** The PAS, office, for others own survey
* Emdibir and Agena were purposely included in the sample.

As shown in the table 681 (out of 719 sampled households) ever married women aged 15-49 and 160 currently married men formed the basses of the study; of the remaining 38 house

holds some were abandoned, and others were occupied by women who were not eligible due to age. Martial status criteria was employed for determining eligibility because in a population where birth takes place mainly within wedlock it is not economic to interview never married women who are not exposed to the risk of conception and also culturally it is not safe to inquire a never married woman about birth and birth related matters.

2.2.3 Source of Data and The Questionnaire

The data was gathered by means of sample survey interview using structured questionnaire organized into two major parts. Women and husband questionnaire. Women questionnaire has 9 subsections. Data on age, sex and martial status of the usual member of the household and characteristics of dwelling unit(s) was collected in section one and section two respectively. Section three dealt with characteristics of the respondent (length of urban residence, education and religion and religiosity) followed by section four that focused on fertility, breast feeding, postpartum sexual abstinence, postpartum amenorrhoea and pregnancy wastage.

Section five included items on KAP variables followed by questions on additional number at children desired, wanted fertility, and "samer" in section six.

Information on marital history was obtained in section seven. Questions about perceived economic and old age security value of children were put in section eight followed by

section nine that treated work status and household income indicators.

The husband questionnaire included relevant items selected from section three, five, six and eight. Most of the items in the questionnaire are adapted from WFS core questionnaire (WFS, 1975) value of children study (Arenold et al., 1975 and from caldwell, 1982).

The English version of the questionnaire was translated into Amharic and Guragigna and pre-tested using 40 ever married women from 5 PAS (3 from Ezha-and-Wolene and 2 from Cheha weredas). Based on the pre-test difficult and vague items were discarded and the length of the questionnaire was reduced. The questionnaire (the Guragina version) was administrated by 12 female graduates from high school, who were recruited on the basis of proficiency in Guragigna and grade points in Ethiopian Schools Leaving Certificate Examination.

They were trained for five days, four days for class room instruction, discussion, and model interviews and one day for practice interview in the field. In the class the entire questionnaire (Guragina version) was discussed step by step. However, two interviewers were found inefficient and thus dismissed.

2.2.4 Data Evaluation

In an illiterate population, where we do not have the culture of documenting demographic data, one does not expect

accuracy in reporting such data. Therefore, it is imperative before any analysis to check the accuracy of age and fertility data.

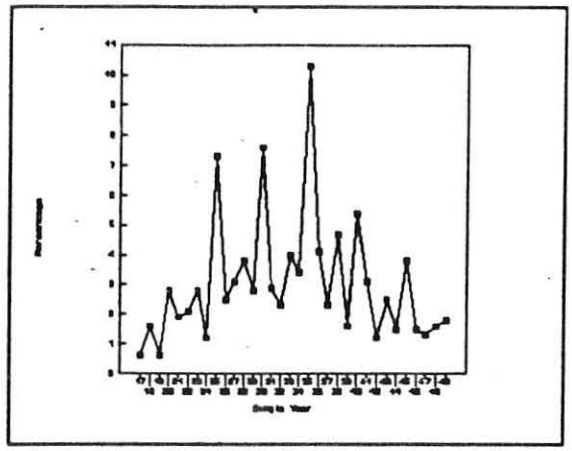
2.2.4.1 Evaluation of Age Data

Under normal condition / in the absence of rapid mortality decline and massive migration/, if age is correctly reported the proportion of the population steadily declines toward old age. One way of checking, the accuracy of age data is to draw a frequency graph depicting percentage distribution of women by age / single year/ figure 3. As portrayed in the figure there is heaping at ages ending in 0,5 and 8; these are the most preferred digits for both younger and older women. These digits were reported by about 16,21 and 12% of women respectively (Table 2.3). Results similar to this were obtained by previous studies in Shewa (Betemariam, 1991) and in Shashemene (Hussien, 1992).

In addition, Mayer's blended index (Shryock, et al, 1976) that vary hypothetically from 0 (no heaping) to 90 (all ages reported at a single age) is shown in table 2.4. The summary index is 20.4. and 20.5 for ages between 17-49 and 20-49 respectively Compared with previous findings from rural Shewa (30.2 though calculated for ages 15-49 years) (OPHCC, 1989:9) the reported age in the study area seems relatively correct.

Figure 3

Percentage of Women by Single Year of Age



Note: The youngest age was 17 years

Table 2.3

Percentage of Women by Terminal Digit Preference

Digits	0	1	2	3	4	5	6	7	8	9
%	15.9	7.9	5.6	9.3	6.0	21.5	8.1	7.3	11.7	6.8

Source:- Own Survey

However, since there is heaping at all ages as indicated by a non-zero value (last column of Table 2.4) of age preference indices for terminal digits, to smooth out the heaping, the sample population is grouped into 5 years age group when necessary.

Table 2.4

Age Preference Indices for Terminal Digits by Mayer's Blended Method, Cheha and Ezha-and-Wolene Weredas, 1993

Digit	Population with Terminal Digits		Weight For		Blended	%	Absolute
	Starting at age 17	Starting at age 27	Column 1	Column 2	Population 2x4+3x5	Distribution	Deviation of % from 10
0	108	89	1	9	909	16.19	6.19
1	54	21	2	8	276	4.92	5.08
2	38	24	3	7	282	5.02	4.98
3	63	44	4	6	516	9.19	0.91
4	41	33	5	5	370	6.59	3.41
5	146	96	6	4	1260	22.73	12.44
6	55	38	7	3	499	8.89	1.11
7	50	25	8	2	450	7.45	2.55
8	80	43	9	1	763	11.83	1.83
9	46	23	10	0	480	7.48	2.52
Total	681				5805	100.0	41.02
Summary Index: Total Dev iation÷2							20.05

Source: Own Survey

2.2.4.2 Appraisal of Data on Children Ever Born

The need to evaluate the accuracy of reported data on fertility emanates from the fact that data like the number of children ever born alive can be subjected to either omission or commission.Under reporting may arise due to omission of children who were away from home for a long period of time, children who died soon after birth and children born to another husband. In addition, many people in the traditional societies do not like telling, let alone the number of children, the number of livestock due to cultural reason (the belief that it causes death). During the survey when women were asked about the number of children, some said first " O! let not death count my children". On the other hand, the

inclusion of step-child or adopted children may cause overreporting of children ever born.

The problem of underreporting is more serious for older women, particularly where illiteracy and infant mortality is high; and where women have large number of pregnancies and live births.

Thus, an attempt is made to appraise the data on fertility by observing the distribution of mean number of children ever born (mean CEB), the sex ratio of CEB, and proportion of children died by five years age group of women.

It is expected that in the absence of abnormalities, average parties and age of women are positively related. In the case of the data from the survey as observed from Table 2.5 average parity is progressively rising with advancing age of women at all levels (PAS, weredas and for the whole sample). On the otherhand, mean number of children ever born in the last five years increases up to age 30-34 and then starts declining because at ages after 39 women are normally approaching completed fertility so that many of living children tend to be over 5 years of age. Number of children ever born and number of women by 5 years age group is presented in Appendix 11.

Therefore, it may be suggested that there is no indication of serious problem of misreporting of live births.

As regards to distribution of sex ratios of children ever born by age group of women according to UN(1983) for the African population under normal circumstances, the sex ratios

at birth are expected to be with in the range of 102 and 107. So any significant deviation from these values indicates differential mis-reporting of either sexes. The sex ratio of children ever born alive by five years age group of women is presented in Table 2.6

Table 2.5

Mean Number of Children Ever Born (MCEB) and Recent CEB by 5 years Age group of Women, PAS, Weredas and Total, Cheha and Ezha-and-Wolene Wereda, 1993

PAS AND	A G E G R O U P S							
WOREDAS	15-19	20-24	25-29	30-34	35-39	40-44	45-49	15-49
SISE & D.	0.00	1.50	2.50	5.00	6.08	7.60	7.88	5.266
	0.00	1.00	1.00	2.00	1.85	1.20	0.50	1.372
AYANDA	0.00	2.50	2.14	4.45	7.30	5.50	6.00	4.509
	0.00	1.67	1.42	1.91	1.90	1.25	1.50	1.544
AEWAN	0.00	0.66	2.71	4.88	5.56	6.91	8.40	4.920
	0.00	0.33	2.00	1.88	1.44	2.00	1.66	1.960
EMDIBIR	1.00	1.32	3.29	4.77	5.13	6.00	7.29	4.455
	0.75	1.00	1.78	1.78	1.17	1.13	1.00	1.366
CHEHA	1.00	2.34	3.63	5.00	5.74	6.35	7.29	4.66
WEREDA	0.75	0.91	1.68	1.89	1.47	1.34	1.23	1.503
YASYA	0.50	1.56	3.08	3.22	5.10	6.25	6.37	3.707
	0.25	1.50	2.00	1.44	2.50	2.00	2.63	1.862
CHEZAS	0.00	2.33	3.27	4.64	4.76	5.83	7.00	4.333
	0.00	1.83	1.80	2.64	1.75	2.17	1.00	1.912
ZIGBA B.	1.50	1.57	2.92	3.00	5.33	6.14	8.33	4.392
	1.00	1.57	1.92	1.43	1.78	1.79	2.83	1.784
AGENA	1.00*	2.00	4.75	5.19	6.08	6.30	3.00*	5.383
	1.00*	1.67	2.25	2.25	1.33	1.50	1.00*	1.766
WKYE	0.33	1.67	2.77	4.07	4.77	3.67	5.50	3.808
	0.33	0.89	1.23	1.71	1.27	0.66	0.86	1.154
SHEBRADEN	0.75	1.67	3.35	5.14	5.38	6.00	6.63	4.560
	0.75	1.40	1.82	2.21	1.69	1.90	1.88	1.773
EZHA &	0.86	1.67	2.35	4.97	5.41	6.04	6.89	4.316
WOLENE	0.66	0.86	1.06	2.30	1.71	1.72	1.61	1.684
TOTAL	0.6314	1.712	2.977	4.855	5.439	6.021	6.971	4.46
	0.58	0.89	1.31	2.12	1.61	1.51	1.42	1.606

Source: Own Survey
Note : * Based on one Woman

* figures in the send rows are MRCEB

TABLE 2.6

Sex Ratio of Children Ever Born by Five Years Age Group of Women for Ezha-and-Wollen and Cheha Wereda and Rural Shewa (1984), 1993

AGE GROUP	S E X R A T I O	
	Cheha and Ezha-&-Wollene	Rural Shewa 1984*
15 - 19	100.00	104.5
20 - 24	104.92	108.9
25 - 29	108.42	108.9
30 - 34	104.29	111.3
35 - 39	105.78	109.2
40 - 44	106.25	112.9
45 - 49	105.19	114.9
T O T A L	105.82	110.8

Source: Own Survey * Betemariam (1992:63)

It is evident from the table that except in the age group 15-19 and 25-29 (the deviation are not, however, great) the sex ratio from the survey data are within the expected, lower and upper limits of sex ratios at birth for African population. Compared with the sex ratios for a sample of women in rural shewa in 1984, where there was underreporting of female live births in all ages groups except 15-19, data from the survey seems fairly accurate.

2.3 Data Analysis

In order to describe the data preliminary descriptive statistics such as mean, standard deviations, coefficient of variations and percentages were calculated.

The interdependency between independent variables and the degree of association between the dependent and independent variables was depicted by correlation matrix.

For nominal data, a non-parametric statistical analysis (chi- square was employed so as to measure difference between observed and expected distributions.

Moreover, to determine the combined effect of two or more independent variables on the predicted variable, a step-wise multiple regression analysis was utilized. It has advantage over the ordinary multiple regression model because independent variables are entered in their order of importance /based on partial correlation coefficients/ in reducing the variance of the dependent variable (Johnson, 1980). It thus ,enbles to decide which independent variables to retain in a final equation.

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2.4 Limitations Of The Study

Due to financial and time constraints the size of the sample is small and thus restricts the genenralizability of the findings. Most of the correlation cofficients calculated on the basis of 10 PAS wer found insignificant.Thus ,if number of PAS were sufficiently large, one would expect better results.Thus ,findings related to PAS are less reliable than those related to all women . In addition,because age is not controlled for types of marriage, incidence of spousal separation and number of time married,the findings are not conclusive.

CHAPTER THREE

ASSOCIATION BETWEEN SOCIO-ECONOMIC AND PROXIMATE VARIABLES

This chapter is devoted to the analysis of the relationship between socio-economic factors (education, religion, economic status and child mortality) and proximate determinants (marital status, age at first marriage, duration at marriage, frequency of marriage, breast-feeding, postpartum sexual abstinence forms of marriage.

3.1. Socio-economic Factors and Nuptiality Variables

It has been shown in the literature that the nuptiality factors like age at first marriage and marital status vary according to the socio-economic and cultural conditions of the population. In this part we shall also see whether there is a relation ship between the socio-economic factors and age at first marriage, current marital status frequency of marriage and types of marriage.

3.1.1. Education and Nuptiality

3.1.1.1. Education and Age at First Marriage

Age at first marriage is an important socio-cultural factor which may account for differences among socio-economic strata in fertility performance. In order to see whether age at first marriage varies by women's educational attainment,

the percentage distribution of women by level of education and mean age at first marriage by peasant Association is presented in Table 3.1.

Table 3.1.
Percentage of women by Education, Age at First Marriage and Age at First Birth, peasant Associations and Weredas, Cheha and Ezha- and- Wolene, 1993

PAS and Weredas	NO Formal Education	Primary Education	Junior & Above	Total No	%	Mean Age At First Marriage	Mean Age At First Birth
SISE & D.	83.7	7.0	9.3	43	100	17.2	19.7
AYANDA	94.7	5.3	0	57	100	17.0	19.7
AEWAN	96.0	4.0	0	50	100	16.6	19.7
EMDIBIR	65.5	21.0	13.4	142	100	17.4	20.1
CHEHA WEREDA	79.1	13.0	7.9	292	100	17.3	19.4
YASYA	98.3	1.7	0	58	100	16.4	19.6
CHEZA.S	96.5	1.8	1.8	57	100	16.5	18.5
ZIGIBH.B.	82.4	16.2	1.4	74	100	16.8	19.3
AGENA	87.2	6.4	6.4	47	100	16.1	19.6
WLIYE	100.0	0	0	78	100	16.7	18.8
SHEBRADEN	90.7	6.7	2.7	75	100	16.2	19.9
EZHA & WOLENE	92.5	5.7	1.8	389	100	16.5	19.1
TOTAL	86.8	8.8	4.4	681	100	16.8	19.2

Source: Own Survey $X^2 = 26.5$ (weredas)
$X_2 = 69$ (PAS)

The data in the table revealed that 86.8% of the study population has never been to school. However, by comparison, it is clear that women in Cheha wereda were more educated than women in Ezha-and - Wolene wereda. By PA level, the proportion of women with no formal education varied from 65.5% in Emdibir to 100% in Wkiye. The difference in the level of women's education at both weredas and PA level is significant at 0.05 probability level (see the X^2).

The mean age at first marriage and age at first birth for the sampled women were 16.8 and 19.2 years respectively. Similar figures (for women) were obtained by OPHCC (1989:41)

for Shewa - 17 years and Assefa (1990: 210) 16 years for Arsi and Shewa. Women in Cheha wereda married on average one year later than women in Ezha-and-Wolene wereda. At PA level, the mean age at first marriage varied from 16.1 years in Agena to 17.4 years in Emdibir. Mean age at first birth also varied from 18 years in Cheza-sefer to 20 years in Emdibir; no appreciable difference between the two weredas. The lowest and highest variations in age at first marriage were observed in Shebraden (C.V= 12%) and Emdibir (C.V= 41%) respectively. Previous researches also have shown that marriage among the Gurage is relatively early (Shack, 1966; Syoum, 1989 and Hussien, 1992)

A generally early age at first marriage among the Gurage is an expression of the strong cultural push up on the female to demonstrate their fecundity as soon as possible. However, it is plain from the difference between mean ages at first marriage and ages at first birth that about 2-3 years have passed without birth may be due to adolescent infecundity. The difference varied from 2 years in Yasaya to 3.7 years in Shebraden.

Regarding the effect of women's education on age at first marriage, there is a moderate positive association (r= 0.43) between percent having formal education and average age at first marriage when the data is aggregated at PA level. However, for the whole sample(all women) there is a statistically significant (at 0.05 level) but very weak

positive association between women's education and age at first marriage (r= 0.07)

3.1.1.2 Education and Martial Status, Frequency of Marriage and Incidence of Spousal Separation

Other aspects of nuptiality that can affect the length and timing of regular sexual exposure and that have implication for fertility include marital status, incidence of spousal separation and prevalence of remarriage.

Table 3.2.

Percentage of women by Level of Education, Current Marital Status, Frequency of Marriages and Incidence of Spousal Separation by PAS, weredas, and Total, Cheha and Ezha-and Wolene, 1993.

PAS, & Weredas	Formal Education	Currently Married	Incidence of SpousalSeparation Ever Separated	Frequency of Marriage	
				once	more than once
SISE & D	16.3	95.3	2.3	76.7	23.3
AYANDA	5.3	89.5	3.5	82.5	17.5
AEWAN	4.0	100	2.0	92.0	8.0
EMDIBR	24.4	90.8	9.2	81.7	18.3
CHEA	20.9	92.8	5.8	82.9	17.1
YASYA	1.7	100	3.5	87.9	12.1
CHEZA S.	3.6	84.2	26.3	87.8	12.2
ZIGIBA B	17.6	97.3	9.5	87.8	12.2
AGENA	13.0	95.7	17.0	72.3	27.7
WKIYE	0	97.4	6.4	79.5	20.5
SHEBRA D.	9.4	93.6	6.7	86.7	13.3
EZHA- & - WOLENE	7.5	95.4	11.1	84.1	15.9
TOTAL	13.2	94.2	8.8	83.6	16.4

Source: Own Survey

As could be seen from Table 3.2, of the total sampled ever- married women, 94.2% were currently married at the survey date. The remaining (5.8%) were widowed and divorced. The proportion of currently married women varied from 90.8% in Emdibir to 100% in Yasya. The correlation between proportion currently married and the proportion in formal education, though weak and insignificant at 0.05 level is negative

(r=0.39, for the whole sample). The association is weak may be due to exclusion of never married women.

Incidence of spousal separation (for six consecuitive months in the last 5 years) and frequency of marriage that are considered as proxy measure of instability of marriage also show variation among PAS as well as between weredas.

It is presented in Table 3.2 that 8.8% of women have been separated from their husbands due to voluntary and /or involuntary causes. The corresponding proportion for women in Cheha and Ezha - and - wolene weredas were 5.8 and 11.1 % respectively. By PA level, it varied from 2% in Aewan to 26% in Chezasefer. This is an indication of the importance of temporary spousal separation among the study population that may be attributed to circular migration of the husband which is comma in the Gurage land.

Regarding frequency of marriage, every 16 out of 100 interviewed women were reported to have married more than once. The corresponding proportion among PAS varied from 8% in Yasya to 27.7% in Agena.

There is a weak positive association between women's educational attainment and proportion ever separated (r= 0.22) and frequency of marriage (Γ= 0.36). However, they are not statistically valid. Like wise ,for the whole sample ,incidence of separation was found to be lower among less educated women (r= -0.23).It is significant at at 0.05 level. The positive correlation between these variables, though not clear, appears that education emancipates women from traditional ties that stabilizes marriage. Besides, the probability of remarriage may be higher among educated women

than among the illiterate. Though age is not controlled for ,as indicated by inverse association between women's age and level of education (r=-0.23, for the whole sample) younger women are better educated than the older ones.

3.1.1.3 Education and Types of Marital Union.

It is evident from Table 3.3 that 11% (75) of women interviewed were polygamously married; of this 35 were in Cheha and 40, in Ezha-and-Wolene wereda. Proportion of polygamous wives varied from 6% in Aewan to 23.4% in Agena. There exists a statistically significant variation (at 0.05 level) in types of marriage among the PAS considered (X_2 = 34).

Incidence of polygamy seems very low in the study area compared to other sub-Saharan African countries, like Senegal and Kenya where the proportion of ever married women (aged 15-49) in polygamous union were reported to have been 46% and 27% respectively (UN, 1987:329).

It has been observed that more educated women tend to be in monogamous marriage, because as modern women, they do not want to share husband, and they have a wider choice of marital partner. (Rahman and Phillis, 1988, in Bangladesh and Johnson and Elmi, 1989, in Somalia). However, contrary to the expectation, though very weak and statistically insignificant, (at 0.05 level), there is a positive association (r= 0.03) between proportion having formal schooling and proportion polygamous.

Table 3.3.

Percentage Distribution of women by Education, Types of Marriage PAS, Weredas and Total, Ezha-and Wolene, and Cheha, 1993

PAS, & Weredas	Formal Education	Polygamy	Monogamy	Total No	Total %
SISE & D	16.3	18.6	81.4	43	100
AYANDA	5.3	19.3	81.7	57	100
AEWAN	4.0	6.0	94.0	50	100
EMDIBIR	24.4	9.2	90.8	142	100
CHEA WEREDA	20.9	11.9	88.1	292	100
YASYA	1.7	8.6	91.4	58	100
CHEZA S.	3.6	12.3	87.7	57	100
ZIGIBA B	17.6	8.1	81.9	74	100
AGENA	13.0	23.4	76.6	47	100
WKIYE	0	10.3	89.7	78	100
SHEBRA D.	9.4	4	96.0	79	100
EZHA- & - WOLENE	7.5	10.3	89.7	389	100
TOTAL	13.2	11.0	89.0	681	100

Source: Own Survey $X^2 = 34$

3.1.2. Religion and Nuptiality

3.1.2.1. Religion and Age at first Marriage

Women were asked about the type of religion (Christianity or Islam) they adhered to; the average weekly frequency of church or Mosque attendance (religiosity), and whether they worship any one of the Gurage traditional religious domain - "Boza" (thunder God), "Wak" and "Damamut" male and female cults,respectively. The data is presented in Table 3.4.

Table 3.4

Percentage of women by Major Religions, Age at First Marriage, PAS and weredas, Cheha and Ezha-and-Wolene 1993

PAS, & Weredas	Christian	Muslim	Total No	Total %	Mean Age At First Marriage	Mean Age At First Birth
SISE & D	42.2	56.8	43	100	17.2	19.7
AYANDA	61.4	38.6	57	100	17.0	19.7
AEWAN	36.0	64.0	50	100	16.6	19.7
EMDIBIR	87.3	12.7	142	100	17.4	20.1
CHEA WEREDA	67.1	32.9	292	100	17.3	19.4
YASYA	31.0	69.0	58	100	16.4	19.6
CHEZA S.	98.2	0.8	57	100	16.5	18.5
ZIGIBA B	85.1	14.9	74	100	16.8	19.3
AGENA	90.2	9.8	47	100	16.1	19.6
WKIYE	39.7	60.3	78	100	16.7	18.8
SHEBRA D.	94.7	5.3	75	100	16.2	19.9
EZHA- & - WOLENE	71.0	29.0	389	100	16.5	19.1
TOTAL	69.3	30.7	681	100	16.8	18.3

Source: Own Survey X2 = 65.14

As shown in the table, 69.3% women interviewed were reported to have been Christians. There were more Christians in Ezha- and- Wolene than in Cheha. In six peasant Associations, Christians were the majority. There exists a statistically significant difference (at 0.05 level) in the proportion of pilgrims by types of religion(Christianity and Islam) among PAS. (See the X_2).

As regards to the effect of religion on age at first marriage and age at first birth, there is a direct positive but weak correlation (r= 0.23) between proportion Christians and mean age at first marriage and an inverse association (r = 0.21) between proportion Muslim and mean age at first marriage. Among all women also Christians married later than Muslims (r= 0.05). Muslims were married earlier than christians because they were less educated (r=-0.49, between

proportion Muslim and percent receiving formal education, and (r= 0.58) between percent Christians and proportion having junior and above education).For the whole sample also Christianity and women's educational attainment were found to be positively related (r= 0.17,significant at 0.05 level). Besides, the negative correlation (r= -0.05) between proportion Christian and mean age at first birth but a direct relationship (r = 0.03) between percent Muslim and age at first birth indicates the fact that Muslims, though married early, had their first baby later than Christians.

3.1.2.2. Religion Marital status, Frequency of Marriage and Incidence of Spousal Separation

Table 3.5

Percentage of Women by Religion, Marital Status, Frequency of Marriage and Incidence of Spousal Separation, PAS and weredas, 1993.

PAS, & Weredas	Christian	Muslim	Currently Married	Spousal Separation %ever separ.	Frequency of Marriage: Once	Frequency of Marriage: More than Once
SISE & D	42.2	56.8	95.3	2.3	76.7	23.3
AYANDA	61.4	38.6	89.5	3.5	82.5	17.5
AEWAN	36.0	64.0	100.0	2.0	92.0	8.0
EMDIBIR	87.3	12.7	90.8	9.2	81.7	18.3
CHEA WEREDA	67.1	32.9	92.8	5.8	82.9	17.1
YASYA	31.0	59.0	100.0	3.5	87.9	12.1
CHEZA S.	98.2	0.8	84.2	26.3	87.8	12.2
ZIGIBA B	85.1	14.9	97.3	9.5	87.8	12.2
AGENA	90.2	9.8	95.7	17.0	72.3	27.7
WKIYE	39.7	60.3	97.4	6.4	79.5	20.5
SHEBRA D.	94.7	5.3	93.6	6.7	86.7	13.3
EZHA- & - WOLENE	71.0	29.0	95.4	11.1	84.7	15.3
TOTAL	69.3	30.7	94.2	8.8	84.1	15.9

Source:- own survey

The relationship between percent Muslim and proportion currently married is strongly positive and significant at 0.05 level (r= 0.74). This means that there were a few number of widowed and divorced Muslim women during the survey.

The effect of Christianity on the instability of marital union (measured by frequency of marriage) was positive (r= 0.23) and that of Muslim was negative (-0.21). In addition, incidence of spousal separation is found to be very strongly and directly related to proportion Christian (r= 0.78) and inversely associated with percent Muslims (r= -0.84) (both

significant at 0.05 level). This implies that among the study population, Muslim marriage is more stable than that of christians. However, the reason is not clear; it may be suggested that christian women being better educated would have disolved their first marriage with slightest provocation because they have greater chance of remarriage among the illiterate mass. As to spousal separation, it is plain that (since women's level of education is positively related to percent Christian) the Christian husbands have a higher propensity for temporary migration that accounts, according to the researcher's observation, for the larger proportion of time spent being separated.

3.1.2.3. Religion and Types of Marriage

It has been observed in previous studies that Islam is closely related with polygamy mainly because it permits a man to marry more than one wife at a time. Contrary to the previous findings, this study shows, as presented in Table 3.6, that Christianity is concomitant with polygamy though the correlation coefficients are very weak and statistically invalid (r= 0.10). On the other hand, the correlation coefficient between percent Muslim and proportion monogamous and polygamous are 0.19 and -0.15 respectively. For the whole sample also,there is significant (at 0.05 level) inverse association between Christianity and Monogamy (r= -0.07)

Table 3.6

Percentage of women by Religion, Types of Marriage, PAS and Weredas, Cheha and Ezha-and-Wolene 1993

PAS, & Weredas	Christians	Muslims	Polygamy	Monogamy
SISE & D	42.2	56.8	18.6	81.4
AYANDA	61.4	38.6	19.3	81.7
AEWAN	36.0	64.0	6.0	94.0
EMDIBIR	87.0	12.7	9.2	90.8
CHEA WEREDA	67.1	51.3	11.9	88.1
YASYA	31.0	59.0	8.6	91.4
CHEZA S.	98.2	0.8	12.3	87.7
ZIGIBA B	85.1	14.9	8.1	81.9
AGENA	90.2	9.8	23.4	76.6
WKIYE	39.7	60.3	10.3	89.7
SHEBRA D.	94.7	5.3	4	96.0
EZHA- & - WOLENE	71.0	29.0	10.3	89.7
TOTAL	69.3	30.7	11.0	89.0

Source:- Own Survey.

3.1.3. Economic Status and Nuptiality

The economic status indicators used in this study include area of dwelling unit, area of land holding, frequency of animal slaughter during annual holidays /"Meskel" for Christians, and "Arefa"for Muslims, number of Enset harvested during the last 12 months prior to the survey; tropical live stock unit and number of religious monthly gatherings attended by couples. The last five indicators were selected, and used to build an economic status scale. The mean and coefficient of variation for the selected indicators and the procedure how the scale was developed is shown in Appendix 1.

3.1.3.1 Economic status and Age at first Marriage

Percentage Distribution of women by economic status and mean age a first marriage is presented in the table below simply to see whether there is any relationship. However, it must be noted that there exists a temporal difference between these two variables; economic status being current, though some of the indicators (area of dwelling unit and area of land holding) might have been contemporaneous to age at first marriage.

The direction of association between proportion in high economic status and age at first marriage is negative but the coefficient is extremely weak (r= -0.01). This simply indicates that age at first marriage was earlier among the higher economic status group. Since economic status is partly related to age of women, (the coefficient of correlation between age and age at first marriage is r = -0.10) the older women are married earlier than the younger ones.

Table 3.7

Percentage of women by Economic Status, Age at First Marriage, PAS and Woredas, Cheha and Ezha-and- Wolene, 1993

PAS, & Weredas	Economic Status High	Low	Mean age at First Marriage
SISE & D	32.6	67.4	17.2
AYANDA	33.3	66.7	17.0
AEWAN	24.0	76.0	16.6
EMDIBIR	4.9	95.0	17.4
CHEA WEREDA	17.9	82.8	17.3
YASYA	17.9	82.8	16.4
CHEZA S.	35.1	64.9	16.5
ZIGIBA B	40.5	59.5	16.8
AGENA	6.4	93.6	16.1
WKIYE	30.8	69.2	16.7
SHEBRA D.	21.3	78.7	16.2
EZHA- & - WOLENE	26.5	73.5	16.5
TOTAL	22.8	77.2	16.8

Source: Own Survey.

3.1.3.2 Economic Status and Frequency of Marriage and Incidence of Spousal Separation

Inorder to see as to which economic status group is more stable in marriage, the percentage distribution of respondents by status and measure of instability of marriage is presented in Table 3.8.

3.1.3.3 Economic Status and Types of Marriage

The data presented in the Table 3.9 suggests that high economic status and polygamy are positively related. The coefficient of simple correlation (though not significant at 0.05 level and weak) between percent polygamous and proportion in high economic status is 0.07 and between percent monogamous and percent high is -0.31. Like wise,at individual household level,area of dwelling unit and land-holding and tropical live stock unit were found to be inversely associated with monogamous marriage(r=-0.02,-0.06 and -0.01 respectively). The same pattern of association is observed when proportion of women in low economic status is related with proportion polygamous or monogamous. That means that husbands in economically better households can afford to have more than one wife.

Table 3.9
Percentage of Women by Type of Marriage, PAS, and Weredas, Cheha and Ezha- & Wolene, 1993

PAS & Woredas	Economic Status High	Low	Form of Marriage Monogamous	Polygamous
SISE & D	32.6	67.4	81.4	18.6
AYANDA	33.3	67.7	81.7	19.3
AEWAN	24.0	76.0	94.0	6.0
EMDIBIR	4.9	95.0	90.8	9.2
CHEHA WEREDA	17.9	82.8	88.1	11.9
YASYA	17.2	82.8	91.4	8.6
CHEZA.S.	35.1	64.9	87.2	12.3
ZIGBAB.	40.5	59.5	80.9	8.1
AGENA	6.4	93.8	76.6	23.4
WKIYE	30.8	69.2	89.7	10.3
SHIBRADEN	21.3	78.7	96.0	4.0
EZHA-&-WOLENE	22.8	73.3	89.7	10.3
TOTAL	20.3	77.2	89.0	11.0

Sources: Own Survey

3.2 Socio-Economic Factors and Breast-Feeding and Post-Partum Sexual Abstinence

This section discusses the effect of education, religion, economic status and child mortality on breast- feeding and post-natal sexual abstinence.

3.2.1. Education and Breast feeding and Post-natal Sexual Abstinence

3.2.1.1 Education and Breast feeding

In the survey, women were asked about the incidence and duration of full and partial breast-feeding (the last two live

births); wether they feed breast on schedule or on demand; when during 24 hours, the child was intensively breast-fed. Besides, data on availability of milking cows during breast-feedings of all live-births and average length of interval between live births was also collected.

Since breast-feeding is part and parcel of the traditional practices associated with child birth, no woman was reported to have never breast- fed her child(ren).

As common to many other rural populations, almost all women (99.1%) interviewed breast-fed their child (ren) on demand and intensive breast-feeding took place at night (in the bed) both of which are important factors in delaying ovulation (Gray, 1981).

Percentage distribution of women by education, mean length of full- and partial breast- feeding of the Penultimate child, average interval between live-births is presented in Table 3.10.

Table 3.10

Percentage of women's Education, Mean length of Full-and partial Breast- feeding, Average Inter-birth interval, PAS and Weredas, 1993

AS & WOREDAS	No. of Schooling in Years			Average Length of Breast-Feeding in Months		Average Length of Intervals Between Births in Years
	0	1-6	7 & above	Full	Partial	
SISE & D	83.7	7.0	9.3	4.9	24.6	2.6
AYANDA	94.7	5.3	0	5.5	26.0	3.2
AEWAN	96.0	4.0	0	4.5	23.9	3.0
EMDIBIR	65.5	21.0	13.4	5.0	22.0	3.3
CHEHA WEREDA	79.1	13.0	7.9	5.0	23.6	3.0
YASYA	98.3	1.7	0	4.9	27.1	3.7
CHEZA.S.	96.5	1.8	1.8	4.1	27.2	3.3
ZIGBAB.	82.4	10.2	1.4	4.3	27.3	3.8
AGENA	87.2	6.4	6.4	4.6	21.8	3.1
WKIYE	100.0	0	0	3.8	25.1	3.6
SHIBRA.D	90.7	6.7	2.7	3.8	25.5	3.4
EZHA-&-WOLENE	92.5	5.7	1.8	4.0	25.3	3.4
TOTAL	86.8	8.8	4.4	4.5	24.8	3.3

-Source: own survey

As shown in the table,the mean duration of full- breast-feeding for the whole sample was 4.5 months. Women in Cheha wereda breast- fed on average a month longer (5 months) than women in Ezha-and -Wolene woreda (4 months). The range between the longest (5.5 months in Ayanda) and the shortest (3.8 months in wkye and Shebraden) mean length of full-breast-feeding was about two months.

Women in the study area weaned their penultimate child, on average, at age 24.8months; in this case also there was a difference of two months between the two weredas; being longer in Ezha -& - wolene. Among the peasant associations, the range was as high as 5 months. The longest (27 months) and the shortest (22 months) durations were recorded for Yasya,

Chezasefer and zigbaboto on the one hand, and for Emdibir and Agena, on the other, respectively.

It is worthnoting the fact that there was greater difference between individual women in length of full breast-feeding than in duration partial breast-feeding. Indeed, coefficients of variations varied from 30% in Emdibir to 53% in Yasya, and from 21% in Cheza- sefer to 43% in Yasya, in the former and latter cases respectively. On average, women in the study area bear children every 39 months (3.3 years). The shortest (2.6 years) and the longest (3.7- 3.8 years) average intervals between births were recorded in Sise-and-Deneb and in two PAS (where the total breast feeding was the longest) respectively.

The degree and direction of association between women's educational attainment and breast-feeding, average interval between births and post-partum sexual abstinence- that will be discussed later on are presented in the Table 3.11.

It is evident from the table that women's education has a positive effect on mean length of full breast-feeding. As such, there is a very strong and statistically significant inverse

Table 3.11

A summery of Simple Correlation Coefficients, Calculated and Table Value of t for Sub Sample and the Whole Sample.

Sample	Level of Education	Full breast-Feeding	Partial Breast-Feeding	Average Birth Interval	Abstinence
Sub Sample (PAS)	Percent Illiterate	-0.75 (3.3)**	0.35 (1.00)	0.36 (1.07)	0.77 (3.42)**
	Percent in Primary Ed.	0.55 (1.86)*	-0.32 (0.95)	-0.38 (1.1)	-0.84 (4.38)**
	Percent in Junior & Above	0.50 (1.63)	0.17 (0.48)	-0.24 (0.71)	-0.41 (1.27)
	Percent Having Formal Ed.	0.68 (2.62)**	-0.27 (0.74)	-0.29 (0.82)	-0.81 (3.90)*
Total Sample	Length of Schooling	0.11 (2.93)**	-0.16 (4.41) **	0.03 (0.078)	-- --

Source: Own Survey * significant at 0.1 level

** significant at 0.05 level

Figures in parenthesis are calculated t.

association (r= -0.75) between percent illiterate and mean length of full breast-feeding. Though not statistically valid (at 0.05 level) there is moderately strong positive relationship between proportion in primary and junior and above education and mean length of full breast-feeding.

However, education has a reducing effect on mean (length of total breast-feeding as more educated women (except in third category) are not interested in prolonged breast-feeding. Illiterate women seem to start supplemental child food earlier than literate ones, but continue to breast-feed longer. Therefore, education through its depressing effect on prolonged lacation seems to shorten average birth interval. However, none of the correlation coefficients between education and partial breast feeding and average interval between birth is significant at 0.05 level. Neverthless,

average length of interval between live birth is positively related to duration of total breast feeding at both PA level and for whole sample (r=0.63 and 0.59 respectively).

Availability of milking cow which is an important source of child supplemental food is found to reduce length of full breast-feeding (r = -0.34 and -0.02 at PA level and for the whole sample ,respectively).

3.2.1.2 Education and Postnatal Sexual Abstinence

Question on postpartum sexual abstinenece was projective type of·Women were asked to tell the average length of sexual abstinence during lactation in the community. Indirect questions were prefered because sexual intercourse is too private and hence Women usually feel ashamed of talking about it. However, responses are considered their own on the assumption that the experience of an individual woman influences her response . The data is presented in Table 3.12.

Table 3.12

Percentage of Women by Level of Education, Average Length of Postnatal Sexual Absinenece, PAS and Weredas, Cheha and Ezha-and- Wolene, 1993.

PAS & WEREDAS	Length of schooling in years			Average Length of Post-Natal Sexual Absitinence in months
	0	1-6	7 & Above	
SIS & D	83.7	7.0	9.3	3.6
AYANDA	94.7	5.3	0	4.2
AEWAN	96.0	4.0	0	4.1
EMDIBIR	65.5	21.0	13.4	2.1
CHEHA W.	79.1	13.0	7.9	3.1
YASYA	98.3	1.7	0	4.3
CHEZA S.	96.5	1.8	1.8	4.3
ZIGBA .B	82.4	16.2	1.4	3.9
AGENA	87.2	6.4	6.4	3.0
WKIYE	100.0	0	0	4.1
SHEBRA .D	90.7	6.7	2.7	3.6
EZHA & WOLLEN	92.5	5.7	1.8	3.7
TOTAL	86.8	8.8	4.4	3.6

Source: Own Survey

The average length of at sexual abstinence for lacting woman for all interviewed women was 3.6 months. Women in Ezha-and - Wolene abstain a little bit longer (by 15 days) than women in Cheha. Among the PAs, it varied from 2 months in Emdibir to 4.3 months in Yasya. However, these figures are not strictly related to the experience of individual woman.

Comparing the mean duration of full breast-feeding and post-natal sexual abstinence, the former was longer than the latter in all PAS. In general, it appears that abstinence is practiced mainly during full breast-feeding, a condition favorable for high fertility.

Looking at educational difference in postpartum sexual abstinence, it is plain from Table 3.11 that education is not compatible with sexual abstinence. As the level of woman's

education increases, there is a decline in sexual abstinence.

Therefore women's education through reducing the fertility inhibiting effect of prolonged lactation and sexual abstinence, if other factors like age at first marriage and use of contraception are constant, would appear to raise the level of fertility.

3.2.2. Religion and Breast Feeding and Post-Natal Sexual Abstinence

The percentage of women by religion mean length of breast-feeding and postpartum sexual abstinence is shown in Table 3.13.

At PA level ,ther is no clear pattern of relationship between duration of breast-feeding and religion. At individual level, however,duration full and partial breast-feeding are inversely related to Christianity (r=-0.02 in both cases). As the Christians are better educated than the Muslims (r=0.17, significant at 0.05 level) they do not practice prologed breast-feeding.

Table 3.13

Percentage of Women by Religion, Mean Length of full and partial Breast-feeding, Postpartum Sexual Abstinence, PAS Weredas, and Total Cheha and Ezha-and-Wolene, 1993

PAS & WEREDAS	Christian	Muslims	Breast-feeding full	Breast-feeding partial	Abstinence Int.
SISE & D	42.2	56.8	4.9	24.6	3.6
AYANDA	61.4	38.6	5.5	26.0	4.2
AEWAN	36.0	64.0	4.5	23.9	4.1
EMDIBIR	87.0	12.7	5.0	22.0	2.1
CHEHA WEREDA	67.1	32.9	5.0	23.8	3.1
YASYA	31	59.0	3.9	27.1	4.3
CHEZA'S	98.2	0.8	4.1	27.2	4.3
ZIGBA.B	85.1	14.9	4.3	27.3	3.9
AGENA	90.2	9.8	4.6	21.8	3.0
WXIYE	39.7	60.3	3.8	25.1	4.1
SHEBRADEN.	94.7	5.3	3.8	25.5	3.6
EZHA-&-WOLENE	71	29	4.0	25.3	3.7
TOTAL	69.3	30.7	4.5	24.8	3.6

Source: Own Survey.

Regarding the effect of religion on postnatal sexual abstinence, it can be observed from the Table that Muslim dominant PAS practiced it longer than others. In fact, the simple correlation coefficient between proportion christian and mean length of abstinence is -0.33 (at PA level).

3.23 Economic Status and Breast-Feeding and Postpartum Sexual Abstinence

It was expected that women in wealthier households tend to have shorter duration of breast-feeding due mainly to

Table 3.14

Percentage of Women by Economic Status, Mean Duration of Breast-feeding, Postnatal Several Abstinence and Average Number of Milking Cow, PAS, Weredas, Cheha and Ezha-and -W Wolene 1993

PAS and Weredas	Economic Status		Breast-feeding		Abstinence	Milking cow
	High	Low	Full	Partial		
SISE.D	32.6	67.4	4.9	24.6	3.6	1.52
AYANDA	33.3	66.7	5.5	26.0	4.2	1.40
AEWAN	24.0	76.0	4.5	23.9	4.1	1.96
EMDIBIR	4.9	95.0	5.0	22.0	2.1	1.04
CHEHA WEREDA	17.9	82.8	5.0	23.6	3.1	1.34
YASYA	17.2	82.8	4.9	27.1	4.3	1.86
CHEZ.S	35.1	64.9	4.1	27.2	4.3	1.63
ZIGBA.B	40.5	59.5	4.3	27.3	3.9	1.68
AGENA	6.4	93.8	4.6	21.8	3.0	1.26
WKYE	40.5	60.2	3.8	25.1	4.1	1.69
SHEBRA.D.	21.3	78.7	3.8	25.5	3.6	0.92
EZHA-&-WOLENE	22.8	73.3	4.0	25.3	3.7	1.50
TOTAL	22.8	77.2	4.5	24.8	3.6	1.43

Source: Own Survey

3.3. Child Mortality and Breast-feeding and Postpartum Sexual Abstinence

In this study child mortality is measured by the number of children died before the age of six and proportion of children died. The data is presented in the Table 3.15.

Table 3.15

Percentage of Women by Measure of Child Mortality, Breast-feeding and Postpartum Sexual Abstinence, PAS and Weredas, Cheha and Ezha -and -Wolene, 1993

PAS, & Wereda	Mean Number of Children Died Before Age 6	Proportion of Children Died	Mean Length of Breast-feeding Full	Mean Length of Breast-feeding Partial	Average Length of Abstinence
SISE & D	0.452	0.1239	4.9	24.6	3.6
AYANDA	0.084	0.1789	5.5	26.0	4.2
AEWAN	0.760	0.1748	4.5	23.9	4.1
EMDIBIR	0.244	0.0570	5.0	22.0	2.1
CHEHA & WOLENE	0.44	0.1124	5.0	23.6	3.1
YASYA	0.527	0.1953	3.9	27.1	4.3
CHEZA S.	0.630	0.1498	4.1	27.2	4.3
ZIGIBA B	0.662	0.1877	4.3	27.3	3.7
AGENA	0.383	0.1265	4.6	27.8	3.0
WKIYE	0.397	0.1271	3.8	25.1	4.1
SHEBRA D.	0.707	0.1637	3.8	25.5	3.6
EZHA- & - WOLENE	0.576	0.1590	4.0	25.3	3.7
TOTAL	0.504	0.1382	4.5	24.8	3.6

Source: Own Survey.

As shown in Table 3.15 the mean number of children died before reaching the age of six varied from 0.24 in Emdibir to 0.76 in Aewan and the proportion of children died also varied from 0.057 in Emdibir to 0.192 in Yasya. By comparison child mortality was higher among women in Ezha- and - Wolene- wereda than among women in Cheha. As such, in Ezha-and- Wolene out of 1000 children ever-born, 159 were reported to have died, whereas the corresponding figure in Cheha wereda was 112 per 1000 children ever born.

The fact that the coefficient of variation (not reported) for both indices of child mortality in every PAS are over 100% indicates the magnitude of difference in child death among women interviewed.

Regarding the effect of child mortality on length of breast-feeding the data suggest that women in PAS with high child mortality breast-feed shorter than women living in other PAS. The simple correlation coefficients between average number of children died and proportion of children died and mean length of full-breast feeding are -0.28 and - 0.18(at PA).But neither of them are statistically significant at 0.05 level.

Child mortality also appears to influence postnatal sexual abstinence. The death of a child at early age makes abstinence unnecessary. But the data revealed that the association between proportion of children died and average length of post-partum abstinence is positive (r= 0.67) and statistically significant at 0.05. Since abstinence is very short unless a child dies at early age, it seems that it has little or no effect on duration of breast-feeding.

CHAPTER FOUR

SOCIO - ECONOMIC FACTORS AND FAMILY PLANNING VARIABLES

In this chapter on attempt is made first to describe the spatial aspects of family planning variables (knowledge, attitude and practice of methods of family planning) and then their relationship with women's education, religion, economic status and child mortality experience is discussed.

4.1. Knowledge, Attitude and practice of family planning method

It is shown in Table 4.1 that about 45% of women and 53.8% of men had ever heard of at least one type of method of contraception. The proportion of respondents who had the knowledge were higher in Cheha (63% of women and 70.3% of men) than in Ezha-and-Wolene wereda (31% of women and 37.4% of men). Among PAS, the corresponding figure varied from 7.4% in Yasya to 84.5% in Emdibir for women sample to 2.5% in Yasya to 93.8% in Emdibir for men sample.

However, only 26% of women and 18% of men (for the whole sample) and 31.2% of women and 23.4% of men in Cheha and 22% of women and 13.4% men in Ezha-and- Wolene wereda approved of the practice of family planning. The proportion of women who approved the practice varied from as low as 11.5% in Wkiye to as high as 55.8% in sise-and-Deneb. Assefa (1990: 217) also found out that in rural Arsi and Shewa out of the total sample

of ever married women 32.3% had the knowledge of at lest one method of birth control; and 26% approved the practice while 30% disapproved it. Compared with this figures, although the knowledge of contraception among the study population seems very high, the proportion disapproving the practice is extremely high (63.6% of women and 81.9% men).

There is a statistically valid difference in the knowledge and attitude towards methods of family planning among PAS and weredas (see the X^2).

Despite the fact that there was a relatively large (for a rural population) proportion of respondents who had the knowledge and positive attitude towards the practice of family planning, there were only ten women (6 in Emdibir and 4 in size-and-Deneba) who reported to have ever used contraception-pills and rhythm method. Except these women, no woman had ever discussed about method of family planning with her husband. This is an indication of the very low level of communication between couples that may defer the practice of family planning in the future.

Table 4.1

Percentage of Respondents by knowledge and Attitudes Towards Family Planning by sex, PAS and weredas, Cheha and Ezha-&-Wolene 1993

PAS, & Weredas	Knowledge of Method of Family Planning				Attitude Towards Family Planning			
	Ever heard		Never heard		Approved		Disapproved	
women	men	women	men	women	men	women *	men	
SISE & D	76.7	75.0	23.3	25.0	55.8	37.5	41.9	62.5
AYANDA	28.1	69.8	71.9	30.2	36.8	25.0	56.1	75.0
AEWAN	30.0	43.8	70.0	56.2	14.0	5.2	84.0	93.8
EMDIBIR	84.5	93.8	15.5	6.2	27.5	8.7	69.7	81.3
CHEHA WEREDA	63.4	70.3	37.0	29.7	31.2	23.4	64.7	76.6
YASYA	7.4	25.0	92.6	75.0	19.0	12.5	72.4	87.5
CHEZA S.	26.3	43.8	73.7	56.4	26.3	12.5	70.2	87.5
ZIGIBA B	33.8	56.3	66.2	43.7	32.4	5.2	67.6	93.8
AGENA	74.5	62.3	25.5	37.7	31.9	25.0	68.1	75.0
WKIYE	23.1	31.3	76.9	68.7	11.5	5.2	87.2	93.8
SHEBRA D.	30.7	35.5	69.3	64.5	17.5	18.7	82.7	81.3
EZHA- & - WOLENE	30.8	37.4	69.2	62.6	22.4	13.4	75.6	85.4
TOTAL	44.6	53.8	55.4	46.2	26.1	18.1	63.6	81.9

Source: Own Survey

* Percentages don't add up 100 because 20 women answered "do not know"

X_2 = 186.4 (knowledge FP)

X^2 = 43.9 (Attitude towards FP)

It is also presented in Table 4.2. that of the total 512 fecund women and 133 men, about 14% of the respondents had the intention to use family planning service some time in the future; 18.6% (women) 21.6% (men) were in Cheha and 9.9% (women), and 13.4% (men) were in Ezha- and- Wolene wereda.

Table 4.2

Percentage of Subjects by Responses to Question "Do you think you or your husband /wife may use method of family planning in the future?", by sex, PAS and weredas, Cheha and Ezha- & - Wolene, 1993

PAS, & Weredas	RESPONSES							
	YES		NO		UNCERTAIN		TOTAL	
	women	men	women	men	women	men	women	men
SISE & D	21.9	33.3	54.3	66.7	18.8	0.0	32	12
AYANDA	6.3	20.0	75.0	80.0	18.8	0.7	48	15
AEWAN	12.0	0.0	88.0	99.0	5.7	6.7	35	12
EMDIBIR	23.2	26.7	66.3	73.3	10.5	0.0	95	12
CHEHA WEREDA	18.6	21.6	68.6	78.4	12.9	0.01	210	51
YASYA	4.0	7.1	93.0	85.8	10.0	7.1	50	14
CHEZA S.	11.4	18.2	84.1	81.8	4.5	0	44	11
ZIGIBA B	8.6	21.4	74.3	78.6	2.9	0	70	14
AGENA	23.5	15.4	70.6	84.6	5.9	0	34	13
WKIYE	7.0	6.7	87.7	93.3	5.3	0	57	15
SHEBRA D.	8.0	13.3	89.5	96.7	1.6	0	57	15
Ezha-& Wolene	9.9	13.4	85.1	86.6	5.0	0	302	82
TOTAL	13.5	13.8	78.3	86.2	8.2	0	512*	133*

Sources: Own Survey

Note: 169 women and 27 men were found infecund and hence were not asked about their future intention to use family planning.

It is worthnoting the fact that there were at least four women and one man in each PAS (in the sample population) who would like to benefit out of family planning services in the future. These people may be used as agents to diffuse the practice of family planning among the population.

The major reasons for lack of interest to practice method of family planning in the future were the need to have as many children as possible (78.2% of women and 56.1% of men) and the belief that it is God's business (17% women and 37.4% of men). And about 3% of women said that the husband is against it.

Moreover, 11.3% of women ever heard of the practice of induced abortion else where; only 7.6% of women interviewed

witnessed its practice in the Gurage land. Almost all respondents (98.8% of women disapproved the practice of induced abortion, because they felt that it was sinful (see appendix 3).

Women were also asked about the knowledge and practice of prolonged breast-feeding for the purpose of spacing births, and the data is presented in rable 4.3. It is evident from the table that the contraceptive effect of prolonged lactation was knowaby 18.2 % of women interviewed; the corresponding figures for Cheha and Ezha- and-wolene were 26.4% and 12% respectively. Among PAS, the proportion varied from 6.4 in Wkiye to 46.5% in Sise- and Deneb. However, only 18.5% (23) women reported to have practiced prolonged breast-feeding for the purpose of widening interval between births. Therefore, it appears that the majority of women interviewed practice prolonged lactation simply to nurse their children.

Table 4.3

Percentage of women by knowledge of Fertility Inhibiting Effect of prolonged Location, Is practice, PAS and weredas, Cheha and Ezha- &-Wolene, 1993

PAS, & Weredas	Ever Heard No.	Ever Heard %	Never Heard NO.	Never Heard %	Ever Used No.	Ever Used %	Never Used No.	Never Used %
SISE & D	20	46.5	23	53.5	2	10	18	90
AYANDA	10	17.5	47	82.5	3	30	7	70
AEWAN	9	18.0	41	82.0	0	0	9	100
EMDIBIR	38	26.8	104	73.2	6	15.8	32	84.2
CHEHA WEREDA	77	8.6	215	73.6	11	14.3	66	85.7
ASYA	5	8.8	53	91.4	0	0	5	100.0
CHEZA S.	5	9.5	52	91.2	1	20.0	4	80.0
ZIGIBA B	7	27.7	67	89.5	4	57.1	3	42.9
AGENA	13	6.4	34	62.3	4	30.8	9	69.2
WKIYE	5	16.0	73	93.6	1	22.0	4	80.0
SHEBRA D.	12		63	84.0	2	16.7	10	83.3
Ezha-& Wolene	47	12.1	324	87.9	12	25.5	35	74.5
TOTAL	124	18.2	55.7	81.8	23	18.5	101	81.5

Source: Own Survey

$X^2 = 79.4$ (PAS) $X^2 = 20.5$ (weredas)

As indicated by the Chi-square statistic, there is a significant variation in women's knowledge of contraceptive effect of prolonged lactation among PAS and between weredas

4.2 Education and Family planning variables

It has been indicated in the literature that women's educational attainment is one of the strongest socio-economic factors that enhance the knowledge and use of contraceptive method. This fact is born out by the data from the survey (see the Table 4.4).

Table 4.4

A summary of Simple Correlation Co fficients Between Women's Educational Attainment and Family planning Variables and Others for the Sub-sample Cheha and Ezha-&-Wolene, 1993

Family planning Variables	Level Of Education			
	% illiterate	% with primary Education	% with junior & above education	% with formal Education
Knowledge of family planning				
% ever heard	-0.93 (7.1)*	0.90 (7.3)*	0.88 (4.2)*	0.90 (7.5)*
% never heard	0.96 (9.7)*	-0.92 (7.4)*	-0.44 (1.35)	-0.92 (7.4)*
Attitude towards family planning				
% approved	-0.67 (2.1)	0.60 (1.76)	0.50 (1.5)	0.61(1.77)
% disapproved	0.68 (2.2)	-0.61 (1.76)	0.05 (0.03)	-0.64 (1.4)
Future Intention to use family planning method				
% intended	-0.43 (1.3)	-0.62 (1.76)	0.65 (1.98)	0.60 (1.76)
% not intended	0.76 (3.3)	0.47 (1.4)	-0.51 (1.51)	-0.47 (1.4)
Knowledge of contraceptive effect of lacation				
% ever heard	-0.78 (3.5)*	0.02 (1.81)	-0.78 (3.5)*	0.77(3.4)*
never heard	0.80 (3.8)*	-0.58 (1.62)	0.81 (3.8)*	0.85 (3.8)*
knowledge of induced abortion				
% ever heard	-0.65 (1.98)	0.69 (2.1)	0.59 (1.69)	0.65 (1.98)
% never heard	0.69 (2.1)	-0.59 (1.69)	-0.45 (1.3)	-0.68 (2.1)

Source: Computed from Survey Data
* Significant at 0.05 level
Figures in parenthesis are tabulated t.

It is evident from the rable 4.4 that there is a very strong negative association (r= -0.93) between proportion illiterate and proportion ever heard of at least one method of family planning. As proportion of women with primary education increases so does the percentage of women who had knowledge of contraceptive method (r= 0.90). Like wise at individual level ,lack of knowledge and disapproval of contraception decreases as education increases (r= -0.25 and -0.09, significant at 0.05 level). In addition, though the co fficients are not statistically valid, educated women were more favorable

than illiterate ones. Although, as has been shown earlier, illiterate women breast-feed longer than educated ones, they know little about the contraceptive effect of prolonged lacation (the co.fficient of correlation between percent illiterate and proportion having such knowledge is -0.78).At the individual level,the knowledge was found to be lower among less educated women (r= -0.08). The knowledge of induced abortion also increases with women's education.

4.3. Religion and knowledge, Attitude and practice of Family Planning

Different religions tend to develop certain kind of attitudes, beliefs and practices among the pilgrims. For instance the catholic condemn artificial method of birth control because of a belief that it is against God (Chaudhary 1982 and Seyoum, 1989).

In the study area there was considerable variation in the family planning variables by women's religion. It is presented in Table 4.5 that peasant Associations with large proportion of Christians were associated with large proportion of women who had the knowledge of family planning, fertility limiting effect of prolonged lactation, positive attitude towards birth control and intention to practice contraception in the future.

Table 4.5

Percentage of women by Religion, knowledge, Attitude, practice of family planning in the Future, Awareness of Contraceptive effect of Breast- feeding, PAS and weredas, Cheha and Ezha- and - Wolene, 1993

PAS, & Weredas	Religion		Knowledge of Family Planning	Attitude towards Family Planing	Intention of Family Planing	Contraceptive effect of Breast-feeding	
	Christian	% Muslim	% Never heard	% Disapproved	% intended.	% Never heard	% Ever used
SISE & D	42.2	56.8	23.3	41.9	21.9	46.5	10
AYANDA	61.4	38.6	71.9	56.1	6.3	17.5	30
AEWAN	36.0	64.0	70.5	84.0	20.0	18.0	0
EMDIBIR	87.3	12.7	15.5	69.7	23.2	26.8	15.8
CHEHA W.	67.1	32.9	37.0	64.7	18.6	26.4	14.3
YASYA	31.0	59.0	92.6	72.4	4.0	8.6	0
CHEZA S.	92.2	0.8	73.7	70.2	11.4	8.8	20.0
ZIGIBA B	85.1	14.9	66.2	67.6	8.6	9.5	57.1
AGENA	90.2	9.8	25.5	68.2	23.5	27.7	30.8
WKIYE	39.7	60.3	76.9	87.2	7.0	6.4	22
SHEBRA D.	94.7	5.3	69.3	82.7	8.0	16	16.7
Ezha-& Wolene	71.0	29.0	69.2	75.6	9.9	12.1	25.5
TOTAL	69.3	30.7	55.4	63.6	13.1	18.2	18.5

Source: Own Survey

For instance,in Christian dominant areas like Emdibir (87.3%), and Agena (90.2%) the proportion of women who had no knowledge of family planning were the lowest, 15.5 and 25.5 respectively. However, not all Muslim dominant PAS had the largest proportion of respondent who had never heard of method of family planning. In Sise - and - Deneb where Muslims were dominant (56.8%) only 23.3% of women were reported to have no knowledge of family planning. The same thing applies to almost all other family planning variables. This implies that factors other than religion (education and urban experiences) may play important role in this regard. In addition, the lacation of

Atat hospital in Sise- and Deneb might have increased women's knowledge of family planning.

Nevertheless, as we have seen before, since religion is related to educational attainment of the woman, the data shows that Christianity is positively related to the knowledge (r= 0.55), attitude (r= 0.21) and intention of using method of family planing in the future (r= 0.43) and Islam is negatively associated with these variables (r= -0.49, -0.26 and -0.28, in the same order indicated above). Though none of these coefficients of correlation are statistically valid, may be due to small size of sub sample (10 PAS), for the whole sample (at individual house hold level), they are significant(at 0.05 level), the coefficients between Christianity and knowledge and attitude variables were 0.081 and 0.074, respectively.

4.4. Child Mortality and Family Planning Variables

It has been found that because of the desire for replacing deceased child (ren) women experiencing high child mortality do not like to limit births. (Chaudhury, 1982 and Sufian and Johnson 1989).

The data (Table 4.6) from the survey also has shown that there is a general inverse association between indices of child mortality and proportion approved and proportion inttending to practice method of family planning. The lower the percentage of children died, the higher the proportion approving the use of contraception and intending to use it in the future.

Table 4.6

Proportion of Children Died and Proportion of Children Died before Age 6 by Attitude Intention to practice Method Family planning, in the Future PAS and weredas, 1993

PAS, & Weredas	Proportion of children died		Proportion Disapproved	Proportion intending to use family Planning in the future
	At any age	At age below 6		
SISE & D	0.1239	0.3220	41.9	21.9
AYANDA	0.1789	0.4432	56.1	6.3
AEWAN	0.1748	0.3878	84.0	20.0
EMDIBIR	0.0570	0.1701	69.7	23.2
CHEHA WOREDA	0.1124	0.2938	64.7	18.6
YASYA	0.1953	0.2685	72.4	4.0
CHEZA S.	0.1498	0.3119	70.2	11.4
ZIGIBA B	0.1877	0.3712	67.6	8.6
AGENA	0.1271	0.2169	68.1	23.5
WKIYE	0.1637	0.3444	87.7	7.0
SHEBRA D.	0.1637	0.3985	82.7	8.0
EZHA- & - WOLENE	0.1590	0.3267	75.6	9.9
TOTAL	0.1382	0.3135	63.6	13.5

Source: Own Survey

This is substantiated by positive coefficients of correlation between proportion of children died at any age and percent disapproving (r=0.3) and between percentage of children died at age below six and percent disapproving (r=0.35). Likewise, the intention of using method of family planning in the future is inversely related to proportion of children died at any age (r= -0.77) and those died at age before six Years (r= -0.50).For the whole sample, child mortality and disapproval of the use of contraception are positively related (r= 0.06)

4.5. Economic Status and Family Planning Variables

Inorder to see the relationship between household economic status and attitude and intention of using contraception in the future, percentage distribution of women by economic status and the indicated family planning variables is presented in Table 4.7.

Table 4.7

Percentage Distribution of women by Economic Status, Attitude towards Family planning, Intention of using Contraception in the future PAS, and weredas, Cheha and Ezha- and Wolene, 1993

PAS, & Weredas	Economic Status		Attitude Towards Family Planning	Proportion Intended
	% High	% Low	% Disapproved	
SISE & D	32.6	67.4	41.9	21.9
AYANDA	33.3	66.7	56.1	6.3
AEWAN	24.0	76.0	84.0	20.0
EMDIBIR	4.9	95.0	69.7	23.2
CHEA WEREDA	17.9	82.8	64.7	18.6
YASYA	17.2	82.8	72.4	4.0
CHEZA S.	35.1	64.9	70.2	11.4
ZIGIBA B	40.5	59.5	67.6	8.6
AGENA	6.4	93.5	68.1	23.5
WKIYE	30.8	69.2	87.2	70.0
SHEBRA D.	21.3	78.7	82.7	8.0
EZHA- & - WOLENE	26.5	73.7	75.6	9.9
TOTAL	22.8	77.2	63.6	13.5

Source: Own Survey

It can be observed from the Table that women in wealthier households had positive attitude towards practice of family planning. As such, the association between proportion in high economic status and proportion disapproving practice of contraception is negative (r= -0.3). However, the high economic status group had no interest to use method of birth control in future (r= -0.32). On the other hand, although the low status group had the intention to use family planning in

the future (r= 0.35) they disapproved its use (r= -0.32). In spite of the observed contradiction between approval of birth control and lack of interest to use it in the future, the desire by women in the low status household to benefit out of family limitation in the future supports previous study carried out in rural India (Driver, 1963). This is perhaps an indication of sensing the financial burden of raising children by low economic status household.

When some economic status indicators (such as area of land-holding and number of Enset harvested) are considered, PAS with large proportion of wealthier households were found to have large proportion of women disapproving the practice of contraception and women who lacked interest in its use in the future.

CHAPTER FIVE

SOCIO- ECONOMIC FACTORS AND PERCEIVED ECONOMIC AND OLD AGE SECURITY VALUE OF CHILDREN

Economic theories of fertility suggest that in many societies people want children because they expect that children will contribute to the family economically (Arnold etal, 1975:41). It has also been found that such expectation vary by socio-economic characteristics of parents. So in this chapter an attempt is made to ascertain whether these expectations are held by different socio-economic groups among the study population. It also sheds light on the relation_ship between socio-economic factors and women's perception of advantage and disadvantage of having many (as high as 12) children and important reasons for having them. Actual economic contribution of children and husband-wife difference in the expectation of child support and perception of advantage and disadvantage of large family are also considered.

5.1 Socio-Economic Factors and Economic Contribution of Children to the House_hold /Parents/

Data on the economic and pension value of children to parents was obtained only indirectly through responses to relevant questions in the questionnaire.

As common to many rural regions of the developing world

children in the study area assume the responsibility of rendering time consuming household chores from early age (averages for male and female are 6 and 5 years respectively). The type of activities carried out by children include baby minding, cleaning the house_hold and utensils, carrying message and produce; fetching water, wood, crop residues and dried dung for fuel; bird scaring; herding, mowing grass and preparing forage from Ensete leaves, food processing etc. All these activities are essential for functioning of the household economy because with out children adults would not be free to carry out more productive works.

Moreover in later ages (averages for female 12 years and for male 15 years) children start to participate in more productive works like weeding harvesting (up-rooting, scarping and decorticating Ensete) threshing, handycraft and petty trade. Even at ages lower than this Gurage children are busy in making money in different urban areas.

Almost all mothers, 82.4% (except those whose children were babies reported that they received some kind of support (money/gift/ labour) from their children.

The specific type of children's economic contribution to the parent /house_hold/ can be revealed by observing the percentage distribution of mother's response on kinds of children support shown in Table 5.1.

It can be observed from the table that excluding 238 women whose children were too young , 21.3% of the respondent said that their children participated in farming and 78.7%reported that children were engaged in household services.

Table 5.1

Percentage of Women by Responses to Questions' on Types of Children's* Contribution to the Household by PAS and Weredas, Ezha-and-Wolene & Cheha, 1993

PAS, & Weredas	Farming %	Household and other Services %	Total %
SISE & DEN.	7	93	100
AYANDA	14	86	100
AEWAN	21	79	100
EMDIBIR	6	94	100
CHEHA WEREDA	10.7	89.3	100
YASYA	35	65	100
CHEZA S.	29	61	100
ZIGBAB	18	92	100
AGENA	9	91	100
WKIYE	31	69	100
SHEBRA D.	28	72	100
EZHA- & - WOLENE	29.3	71.7	100
TOTAL	21.3	79.7	100

Source: Own Survey * Children living at home.

It is interesting to not the fact that children in Emdibir, Sise, and Agena contributed little to farming perhaps because of proximity to junior and senior secondary high schools that would demand much of children's time in learning. In addition, there is a significant negative correlation (-0.87) between proportion of women having formal education and proportion saying their children are engaged in farming. This is a good indication of the influence of women's

education on the economic value of children.

The relationship between economic status and economic help from children living at home was found to be positive. The correlation coefficient between proportion in high economic status group and percent received money and/or gift from single children living away from home is very strong (r= 0.83) and statistically significant at 0.05 level and the association between percent in low economic status and percent receiving money and/or gift from single children living away from home is strong and negative (r=- 0.81). The direct association between economic status and economic help from children seems to reflect the influence of children's contribution to economic welbeing of the household.

Children who were married and living away from home also reported to have made economic contribution to the parent's household. It is evident from the Table 5.2, (Panale A & B) that 70.4 and 59.7 % of women received money and gift from single and married children, respectively who were living away from home. In both cases, about 25% of the respondent said that they did not get any help. Comparing A and Panel B, it appears that single children are more helpful than married ones.

Table 5.2

Percentage of Women by Responses to Questions on Types of Children's Contribution to Household Economy by PAS and Weredas, Cheha and -Ezha- Wolene- 1993

	A			B		
PAS AND Weredas	Money and Gift	Invitation %	No help %	Money and Gift	Invitation %	No help. %
SISE & D	77.8	7.4	14.8	61.2	11.1	27.7
AYANDA	83.5	6.4	10.3	59.4	20.0	20.6
AEWAN	75.0	3.1	21.9	72.1	14.3	13.6
EMDIBIR	70.4	4.8	24.8	54.9	19.0	26.1
CHEA W.	63.3	8.2	28.1	61.1	16.9	22.0
YASYA	81.0	9.5	9.1	75.4	18.8	6.0
CHEZA S.	83.3	0.0	16.7	69.3	9.0	21.7
ZIGIBA B	83.9	0.0	16.1	70.5	15.8	13.9
AGENA	73.7	3.3	23.4	66.7	14.0	19.0
WKIYE	74.5	4.3	21.2	58.4	16.7	24.9
SHEBRA D.	72.3	2.1	25.6	62.1	17.6	20.3
EZHA- & - WOLENE	76.2	2.9	20.9	58.2	13.7	28.1
TOTAL	70.4	4.0	25.6	59.7	14.9	25.4

Source: Own Survey

* A- Single children living away from home (based on 455 women)
* B- Married children living away from home (based on 154 women).

As to the association between women's educational attainment and economic contribution of children who were married and living away from home, it is found generally negative. Coefficients of correlation between proportion having formal education and proportion ever received money and/ or gift and proportion never get help from children who were not at home and married are -0.18 and 0.30, respectively. A statistically valid, very strong positive correlation (0.81) is also found between proportion illiterate and proportion ever received money and or gift from married children.

On the other hand, consistent with the previous discussion, economic status of the household and economic contribution of children (married and living away from home) are positively related though the coefficients are very weak and insignificant. Once again this may be an indication of the importance of children's contribution in raising the economic status of the household.

5.2. Socio-economic Factors and the Need for Child Help and Old-age Security Value of Children

Irrespective of parents demographic and socio-economic background, almost all (95% of women and 95.8% of men) subjects responded that they want any kind of support from their children at any time. This is not surprising because according to the researcher's experience it is a common belief among the study population that a child (especially who is successful in life) belongs not only to his parent but also to his clan and even to his neighbor.

Regarding perceived old age security value of children, it is evident from table 5.3 that about 86% of women and 77 % of men were sure that they will be supported by their child /children/ during old age; only 12% of women and 15% of men were not certain about it.

There is male - female difference, though not great, in the degree of reliance on children for old age support. Male were less certain than female because the proportion of women who were not sure of child help in old age was about 2 %

against 7.5% for men.

This reflects the greater degree of economic dependance of females. Because of considerable husband-wife age difference (median ages were 34 for women and 40 for men) the probability of being widow seems high among women interviewed. This may be the reason why women expect to depend heavily on their children in their old age. Similar observations have been reported by Arnold et al, (1975:98)

Table 5.3
Percentage of Respondents by Sex, Degree of Reliance on Children For old Age Support, PAS, and Weredas, Cheha and Ezha-and-Wolene, 1993

PAS & Woredas	Women			Men		
	Very high	Very low	Uncertain	Very high	Very low	Uncertain
SISE & D	76.7	7.0	16.3	68.8	12.5	18.8
AYANDA	80.7	0.0	19.3	75.0	6.3	18.8
AEWAN	88.0	6.0	6.0	81.3	0.0	18.8
EMDIBIR	82.4	0.0	77.6	62.5	25.0	12.5
CHEA WEREDA	82.2	2.1	15.1	70.3	10.9	17.2
YASYA	89.7	3.4	6.8	93.8	6.3	18.8
CHEZA .S	82.5	7.0	1.5	81.3	6.3	0.0
ZIGIBA B	82.4	0.0	17.6	75.0	0.0	25.0
AGENA	91.5	0.0	8.5	68.7	6.3	25.0
WKIYE	94.9	1.3	3.8	93.8	0.0	6.2
SHEBRA D.	86.7	0.0	13.3	81.5	12.2	6.3
EZHA- & - WOLENE	87.9	1.8	10.0	81.3	5.2	13.5
TOTAL	85.5	1.9	12.1	76.9	7.5	15.0

Source: Own Survey

The correlation analysis between socio-economic factors and degree of reliance on children for old age support revealed that there was variation among PAS by women's educational attainment, religion and economic status of the household.

Indeed, as presented in Table 5.4, the coefficient of correlation between percent illiterate and percent sure about child support in the old age was positive (0.65), whereas, the corresponding coefficient for proportion illiterate and percent uncertain about child support in the old age was negative (r= -0.51).

Table 5.4

A Summary of Simple Correlation Coefficients Between Women's Socio-Economic Characteristics and Degree of Reliance on Children in the 0 age.

Women's Socio-Economic Characteristics	% Very High (r)	% Uncertain (r)
% Illiterate	0.65	-0.51
	(2.42)*	(1.7)
% Having Formal Ed.	-0.61	(0.72)
	(2.12)*	(2.95)*
% Christian	-0.27	0.36
	(0.80)	(1.12)
% Muslim	0.20	- 0.43
	(0.69)	(1.35)
% In High Economic Status	-0.37	0.21
	(1.14)	(0.70)
% In low economic Status	0.38	-0.27
	(1.16)	(0.8)

Source:- Computed from survey data.
* Significant at 0.05 level
Figures in Parenthesis are calculated t

Likewise, there was inverse relationship (r=- 0.61) between proportion having formal education and percent sure about child support in the old age while the corresponding association between the former variable and proportion uncertain about old age security value of children was found to be strong and positive (r= 0.72). It follows from this general analysis that educated women appeared to be more

pesmistic or uncertain about pension value of children in the future. That is, they had less expectation than the illiterate ones.

Moreover, as explained by the correlation coefficients Muslims, (since they were less educated than the christians), were more certain about help from children in the old age. On the other hand, women in wealthier households were less certain about old age security value of children than women in poorer households. (see the correlation coefficients in Table 5.4).

That is, wealthier and better educated women tended not to depend heavily, on their children in the old age. The finding supports the previous study by Arnold et al, (1975:106) who found inverse association between income and education and measure of expected economic help.

5.3. Socio-Economic Factors and Perceived Advantage and Disadvantage of Having Many Children, Attitudes Towards Large Family and Reasons for Having Children

Comparing parent's perception on advantage and disadvantage of having as many children (many means on average 12 children) as possible, it is plain from Table 5.5 that the majority (58.6% of women and 56.9% of men) of respondents considered large family as advantageous; 33.2% of women and 28.7% men as having both values and disvalues and the remaining (6.6% of women 11.3% of men) as disadvantageous. When the response is disaqregated by PAS and weredas, there exists a statistically significant variation in the perception of the value of large family (see the chi-square).

Men and women (numbering 46 and 226 respectively) who said having may children is both advantageous and disadvantageous were asked whether it is more or less advantageous or equally advantageous and disadvantageous. It is found that only 15% of women and 4.3% of men reported that it is more disadvantageous. Thus on the whole, of the total sample, 11.2% of women and 15.6% of men regarded that having as many children as possible is not advantageous.

It follows from the foregoing observation that, though the difference is not large, women were more favorable to large family than men.

Table 5.5

Percentage of Respondents by Responses to Question "Is it advantageous or Disadvantageous, or Both Advantageous and Disadvantageous to Have as Many Children as God /Alah Permits?" PAS and Weredas Cheha and Ezha- &- Wolene, 1993

PAS, & Weredas	RESPONSES						
	Advantageous		Disadvantageous		Both Adv-&-Dis.		Total
	Women	men	women	men	Women	men	
SISE & D	34.9	56.2	29.9	18.8	39.5	18.8	43
AYANDA	59.6	37.5	3.5	12.5	33.3	50.0	57
AEWAN	66.0	62.5	6.0	12.5	28.0	25.0	50
EMDIBIR	58.2	56.3	7.0	18.7	38.7	25.0	142
CHEHA WEREDA	53.8	53.1	8.6	15.6	36.0	31.3	292
YASYA	65.5	50.0	5.2	6.3	25.9	31.3	58
CHEZA S.	64.4	62.5	7.0	12.5	17.5	18.3	57
ZIGIBA B	81.1	56.3	4.1	12.5	14.9	31.3	47
AGENA	51.1	62.3	4.3	12.5	42.6	25.0	74
WKIYE	55.1	68.8	5.1	6.3	38.5	18.8	78
SHEBRA D.	50.7	56.3	4.0	0.0	45.3	43.7	75
EZHA- & - WOLENE	62.2	59.4	5.1	8.3	31.1	28.1	389
TOTAL	58.6	56.9	6.6	11.3	33.2	28.7	681

Source: Own Survey

X^2 = 6.2 (For women sample - weredas)

X^2 = 100.6 (for women sample - PAS)

* Do not add up 100 due to 15 (10 women & 5 men) do not know responses

Socio-economic characteristics of respondents were found to be related with their perception of the value of children. Proportion illiterate and proportion having formal education were positively (r = 0.41) and negatively (r= -0.30) related

to percent considered large family advantageous. The result support the previous findings by Arnold et.al (1975: 109).

The proportion who said that having many children is advantageous were higher in PAS with large proportion of Muslims and lower in PAS with large proportion of Christians. (r= 0.3 and -0.27 respectively). This seems to reflect the effect of women's education.

As the percentage of women in wealthier household increases so does the proportion of women who precieved large family is advantageous (r= 0.42). However, we have seen earlier that women in wealthier households inclined less to rely on children in old age and than women in poorer households.

Moreover, subjects were asked to indicate level of their agreement on 20 statements regarding values and disvalues of large family. The results (summed scores) are presented in Table 5.6.

As can be observed from the table the mean value of summed ratings on both advantage and disadvantage of having many children were above 35 which means almost all respondents strongly agreed on both values and disvalues of having many children.

Table 5.6

Means, Co fficient of Variation (CV) and Lowest Scores (LS) of Summated Ratings on Advantage and Disadvantage of Large Family by PAS, and Weredas, Cheha, and Ezha - & - Wolene, 1993

PAS, & Weredas	Summated Rating on Positive Altitude Towards Large Family			Summated Rating on Negative Attitude Towards Large Family.		
	mean	CV	Ls	Man	Cv	Ls
SISE & D	36.6	11.4	16	35.8	11.1	20
AYANDE	38.6	7.6	18	37.9	8.0	24
AEWAN	39.2	3.7	32	36.8	11.8	16
EMDIBIR	39.8	1.8	33	38.9	4.5	32
CHEHA WEREDA	38.9	6.0	25	38.2	8.9	23
YASYA	38.9	10.4	12	37.4	12.4	12
CHEZA S.	39.3	6.5	19	38.1	11.2	14
ZIGIBA B	39.2	4.8	23	37.9	6.9	24
AGENA	38.9	6.1	26	36.9	18.2	30
WKIYE	39.9	12.6	35	37.9	11.9	16
SHEBRA D.	39.8	1.8	35	38.5	10.9	14
EZHA- & - WOLENE	39.2	7.7	23	38.5	11.5	22
TOTAL	39.1	6.9	24	38.7	9.7	23

Source: Own Survey

Note: Ideally the summated rating varies from 10 (if a respondent scored 1- strongly disagree on all items) to 40 (if a respondent scored 4-strongly agree on all items).

However, as may be infered from the co fficient of variations and the lowest summed scores in each PAS, there was some degree of variation in subjects' response to advantage and disadvantage of large family. Men's responses (not presented) has shown a similar pattern. Since we have already noted that a considerable number of women (226) and men (47) felt that having many children is both beneficial and disfunctional, this result reflects the same fact that almost all respondents recognized that large family is not without cost.

Finally subjects were asked to rank six reasons for having children (love of children, continuity of the family / clan name, the need for help incase of difficulties before old age, old age security, stabilizing marriage and social acceptance). The results are presented in Appendix 4 and 5 and Figure 4.

As shown in Appendix 5, there was perfect disagreement (as measured by co fficient of discordance 0.01 in Cheha, 0.006 in Ezha -and-Wolene and 0.09 for the whole sample) on ranking the six reasons for having children among women under study.

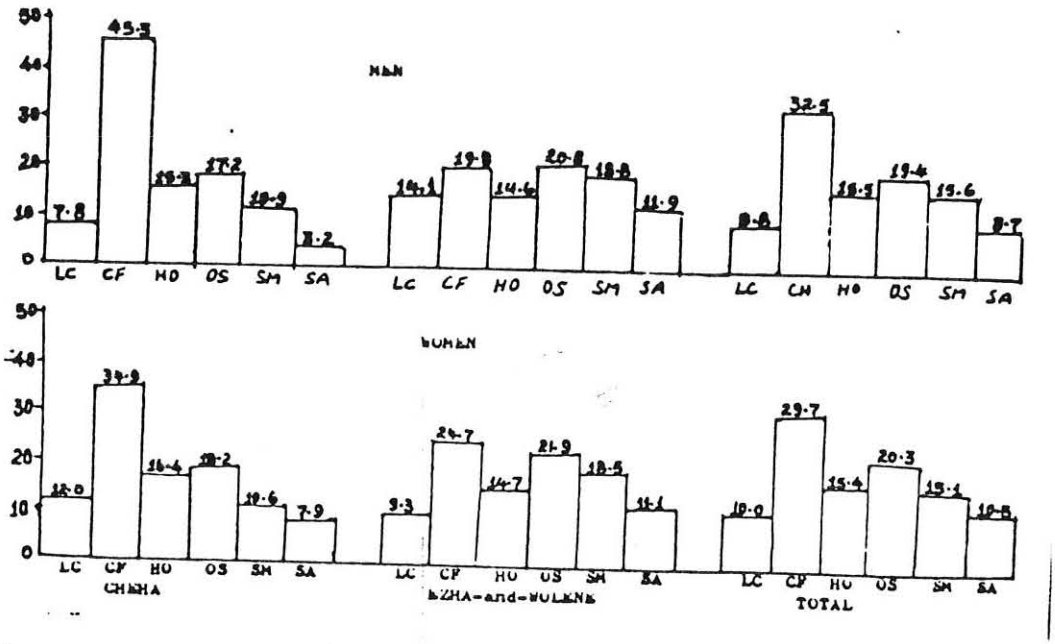
It can be observed from Figure 4 that the highest proportion of women (35% in Cheha, 24.7% in Ezha- and -Wolene and about 30% of the whole sample) ranked continuity of the family / clan/ name as the primary reason for having children. Old age security was considered most important (ranked first) by 18% of women in Cheha 21.9% of women in Ezha- and-Wolene and 20.3% of women for the whole sample. Help before old age was most significant for 16.4% of women in Cheha, 14.7% in Ezha - and -Wolene and 15.4% of women for the whole sample. The second most important motive for having children among women interviewed was love of children that accounted for 36% in all cases (see Appendix 6).

Like female, male respondents also considered continuity of the family / clan/name as the most important reason for having children, selected by 45.3% in Cheha and 32.5 % for the whole sample. But in Ezha- and- Wolene there were two competing reasons- old age security was competing with continuity of the family name ranked first by 20.8 and 19.8% of male respondent respectively. Again men showed similar

pattern of grading with respect to the second most important motive. That is, love of children was ranked second by 40.6% in Cheha, 38.5 % in Ezha - and -Wolene and 3914% for the whole (see Appendix 4)

Figure 4

Percentage of Respondent Who Assigned First Rank to Six Reasons for Having Children by Sex, Wereda and Total Cheha and Ezha-and-Wolene, 1993



Key

LC = Love of Children
CF = Continuity of the Family Name
HO = Help Before Old Age
OS = Old Age Security
SM = Stability of Marriage
SA = Social Acceptance

For the sake of analysis these six reasons are lamped in to three broad categories - emotional & kin group benefit (love of children and continuity of the family /clan name), economic (support before old age and old age security) and social (stability of marriage and social acceptance). The result is presented in Table 5.7. It is evident from the Table that of the whole sample, more than 40% respondents reported that emotional and kin group benefit was the prominent factor determining the desire for bearing children, for the remaining 35.2 and 24.7% of women and 34.4 and 24.3% of men, economic and social motives were given primary importance. Comparing the two weredas, it appears that emotional (kin group) drives were more pervasive in Cheha than in Ezha- and - Wolene for both sexes. On the other hand, economic reasons were more significant in Ezha - and - Wolene than is the case in the other wereda. This is partly due to, as shall been seen, later on, the variation in levels of women's education. There is a statistically significant difference in factor considered most important for having children among the subjects interviewed (see the X^2).

Table 5.7.

Percentage of Respondents by Types of Most Important Reason for Having Children, Sex, PAS & Weredas. Cheha and Ezha - and - Wolene, 1993

PAS, & Weredas	Emotional & kin group-benefit		Economic		Social benefit	
	women	Men	Women	Men	Women	Men
SISE & D	58.1	56.3	25.6	31.3	16.3	12.5
AYANDE	36.8	31.3	36.8	43.7	26.3	25.0
AEWAN	32.0	50.0	40.0	31.3	28.0	18.7
EMDIBIR	52.8	62.5	34.5	25.0	12.7	12.5
CHEHA WEREDA	46.9	53.1	34.6	32.8	18.5	14.1
YASYA	36.2	37.5	43.1	18.7	20.7	43.8
CHEZA S.	47.4	25.0	31.6	43.8	21.2	31.2
ZIGIBA B	33.8	50.0	32.4	18.9	36.5	31.2
AGENA	38.3	25.0	31.9	18.8	27.7	56.3
WKIYE	29.5	31.3	39.7	25.0	36.8	43.7
SHEBRA D.	32.0	25.0	34.7	56.3	34.3	18.7
EZHA- & - WOLENE	35.0	33.9	35.7	34.5	29.3	30.7
TOTAL	40.1	41.3	35.2	34.4	24.7	24.3

Source: Own Survey

$X^2 = 72$ (PAS- for women sample)

$X^2 = 87$ (PAS- for men sample)

As indicated by the correlation co fficients (Tables 5.8) between socio - economic factors and types of most important motives for bearing children, there is a considerable degree of relationship between these sets of variables.

Table 5.8.

A Summary of Correlation Co. fficients Between Socio - economic Factors and Types of Most Important Reasons for Having Children, for Sub-sample of Women, Cheha and Ezha - and - Wolene, 1993

Socio-Economic Variables	Emotional and Kin Group Benefit	Economic	Social
Education			
% Illiterate	-0.45 (1.43)	0.48 (1.4)	0.38 (1.17)
% Having Formal education	0.54 (1.82)	-0.56 (1.85)	-0.30 (0.80)
Religion			
% Christian	0.38 (1.17)	-0.65 (2.42)*	-0.05 (0.15)
% Muslims	-0.26 (0.77)	0.64 (2.36)*	0.15 (0.44)
Economic Status			
% High	0.06 (0.17)	-0.28 (0.79)	0.32 (0.84)
% Low	0.16 (0.46)	0.25 (0.78)	-0.32 (0.84)

Source: Computed from the survey data

* Significant at 0.05 level; figures in parenthesis are calculated values of t- statistics.

The association between proportion illiterate and percent considered emotional /kin group/ benefit as the most important reason is negative (r= - 0.45). That means the major motives for having children for illiterate women was not emotional/ kin group benefit but economic (r= 0.48) and social (r= 0.38). The reverse was true among women having formal education, emotional (kin group) benefit being the most significant (r= 0.54). Since Christians were more educated than the Muslims, what was observed among educated women also applied to christians. Social reason appeared to be the prominent one among women in wealthier households (r=0.32), whereas, for women in poorer households, economic motives ranked first (r= 0.25).

The emotional satisfactions of having children (love, happiness and companionship) were ranked first in importance by a substantial percentage of respondents in all countries considered by value of children study (voc) especially by urban, better educated classes. By contrast, economic benefits and security were more often given first rank by rural respondents. In none of these countries did respondents rank social and religious influences as important reasons for having children. (Arnold, et al., 1975: 48-50). In the same study it was observed that in rural areas kin group benefit was ranked first by a few number of respondents - 17% in Korea, 25% in Taiwan and 17 % in Thaild. Contrary to this finding, the data from the survey has shown that perpetuation of the family /clan/ name is recognized as the strongest motive for having children. Regarding, social reasons (stability of marriage and social acceptance), the population under study also considered it as the least significant.

5.4. Socio - economic Factors and Perceived Economic Cost of children

Some aspects of cost of child rearing are incorporated in items dealing with disadvantage of having many children. There, we have already noted that subjects were well aware of the costs associated with child rearing.

Now we shall look at the subjects evaluation of the trend of cost of child rearing, the major cost and the bearer of the cost and perceived net economic return from children. Also an attempt is made to over view the kind of association between socio-economic characteristics of women and these cost variables.

As presented in Table 5.9 panel A, large proportion of the respondent (89% of women 88% of men) evaluated that compared to the past, nowadays cost of child rearing is increasing rapidly; only 6.2% of women and 5.5 % of men said it is decreasing rapidly; 3.1% of women and 5.2 of men reported that it is about the same as the past. The major cost (the same table panel B) according to 75.5% of women and 76.9% of men is on food followed by education.

Table 5.9.

Percentage of Respondent by Evaluation of Current Cost of Child Rearing (Panel A) and Major Economic Cost of Child Rearing (panel B) sex, PAS and Weredas, Cheha Ezha - and - Wolene 1993

PAS, & Weredas	A: Current Cost of Child Raising						B: Major Economic Cost of Child Raising							
	Rapidly Rising		Rapidly Declining		A kin to the Past		Food		Education		Health		Cloth	
	Women	men	Women	Men	Women	men	Women	Men	Women	Men	Women	Men	Women	Men
SISE & D	93.0	87.5	2.3	6.3	2.3	6.3	62.8	87.5	30.2	12.5	2.3	0.0	0.0	0.0
AYANDA	89.5	93.8	5.3	6.3	5.3	0.0	73.3	62.5	22.8	18.8	0.0	6.3	3.5	12.5
AEWAN	88.0	93.8	0.0	6.3	0.0	0.0	62.0	68.8	34.0	31.3	0.0	0.0	4.0	0.0
EMDIBIR	83.0	87.8	4.2	6.3	4.2	6.3	73.3	68.8	25.4	25.0	1.7	0.0	0.7	6.3
---CHEHA. W	86.6	90.6	7.9	6.3	2.95	3.1	69.9	71.9	27.1	21.9	1.0	1.6	1.7	4.6
--------FURCHA	89.7	62.5	3.4	12.5	6.9	25.0	82.8	93.8	10.3	0.0	0.0	0.0	3.4	6.2
CHEZA S.	93.0	87.5	5.3	6.3	0.0	6.3	77.2	81.3	17.5	18.7	0.0	0.0	5.3	0.0
ZIGBA.B	91.9	93.8	5.4	0.0	1.4	6.3	82.4	68.8	14.9	18.7	0.0	0.0	1.4	12.5
AGENA	89.4	93.8	6.4	6.3	2.1	0.0	76.6	93.8	23.4	6.3	1.0	0.0	0.0	0.0
WKIYE	84.6	87.5	2.6	6.3	2.6	6.3	80.8	56.3	7.7	37.5	0.0	6.3	5.1	0.0
SHEBRA D.	97.3	100.0	1.3	0.0	0.0	0.0	77.3	68.8	16.0	18.8	2.7	2.7	1.3	6.2
EZHA- & - WOLENE	91.0	85.4	4.1	5.2	2.2	7.3	79.7	80.2	14.4	16.7	1.1	2.3	2.0	3.2
---TOTAL	89.1	88.4	6.2	5.5	3.6	5.2	75.5	76.9	19.8	18.8	1.3	2.8		

Source: Own Survey

Note: Percentage do not add up 100 because "do not Know" response are not presented.

As reported by 95.4 % women, cost on education, health and clothing was shared by elder children and other relatives.

Concerning the association between socio-economic factors and responses to questions on cost variables, the correlation analysis has not shown clear pattern, because there is little variation in evaluation of current cost of child rearing and the major cost, among the peasant association. However, it is evident that PAS with large proportion of women having formal schooling were associated with large percentage of respondents

who considered education as a major cost of child rearing. (r= 0.50). By contrast the correlation coefficient between percent illiterate and percent considered education as major cost of child raising was negative (-0.59). This is perhaps because educated women might have greater number of educated (school-going) children than the illiterate ones.

The economic contribution of children to parents according to Chaudhury (1982) depend, among other things, on cost associated with pregnancy, child birth, education, health, food, cloth, Opportunity cost foregone, child's earning age, entry age to labour force, availability of employment, mortality, willingness of the child to help his parents, and the parent's share of the child labour.

Since the major economic cost is on food which is mainly obtained from the farm, and others are shared, opportunity cost foregone is extremely low, children's entry age to labour force is early, and most Gurage children are willing to help their parents, it appears that children are more of economic assets than liabilities to their parents. Nevertheless, response on questions (Table 5.10) about women's feeling regarding the balance of cost and return revealed that only 8.6% of women said that they received more than they spent and 16.9 % of women reported that they received about the same as they spent on children.

Table 5.10

Percentage of Respondents by Responses to Question on Balance of Economic Cost and Return From Children by PAS and Weredas, Cheha and -Ezha- and Wolene 1993

PAS, & Weredas	Received More than Spent	Did Not Receive More than Spend	About the Same	Don't Know
	(%)	(%)	(%)	(%)
SISE & D	4.0	52.0	28.0	8.0
AYANDE	10.0	56.7	13.3	20.0
AEWAN	21.9	56.3	18.8	3.1
EMDIBIR	8.2	71.2	9.6	11.0
CHEHA WEREDA	11.9	62.5	15.0	10.6
YASYA	0.0	47.1	35.3	17.5
CHEZA	0.0	59.3	22.2	18.5
ZIGIBA	10.0	62.5	17.5	10.0
AGENA	6.5	54.8	25.8	12.9
WKIYE	7.3	70.7	9.8	12.2
SHEBRA	6.8	75.0	13.6	4.5
EZHA- & - WOLENE	6.0	64.0	18.5	11.5
TOTAL	8.6	63.3	16.9	11.1

Source: Own Survey

Note: Percentage do not add up 100 because, of 379 women, who were answering the Question, 19 of them gave uncoded responses.

This is perhaps because parents usually over estimate cost of child rearing though the data do not reveal the whole picture because women above age 49 years (who might have received a great deal of help) are excluded. This fact is substantiated by data in Table 5.11

Table 5.11

Percentage of Women by Responses to Question About Age at Which Children Who Do not Go to School Earn or Produce Enough to Balance the Cost on them.

PAS, & Weredas	7-10 Years	10-14 Years	15-20 Years	Above 20 years	Only When Employed	Total No
SISE & D	25.9	7.4	29.6	14.8	22.0	27.0
AYANDE	24.0	18.0	32.0	4.0	24.0	25.0
AEWAN	15.6	9.4	65.6	3.1	6.3	32.0
EMDIBIR	32.6	25.6	31.4	5.8	3.5	8.6
CHEHA WEREDA	27.1	18.2	37.6	6.5	10.0	170.0
YASYA	10.5	15.8	57.9	5.3	15.8	19.0
CHEZA	15.0	10.0	65.0	10.0	0.0	20.0
ZIGBA B.	24.3	13.5	48.6	18.8	2.7	37.0
AGENA	13.3	30.0	40.3	13.3	0.0	30.0
WKIYE	27.5	7.50	45.0	17.5	2.5	40.0
SHEBRA	28.9	15.8	39.5	10.5	5.3	38.0
EZHA- & - WOLENE	21.5	15.1	47.3	11.8	2.2	186.0
TOTAL	24.2	16.8	42.7	9.3	16.0	356.0

Source: Own Survey

That is, about 41% of women (356) and 43% (101) of men reported that children who do not go to school produce or earn enough to balance the cost on them at early age between 7 and 15 years; and 47% said at age between 15 and 20 years. Therefore, about 84% of the respondent acknowledged that children below age 20 could produce or earn enough to compensate for the cost on them. According to the researchers observation, since schools operate in shift system, part of children's time (even if they are student) is spent on useful household or productive work.

CHAPTER SIX

THE EFFECTS OF PROXIMATE AND SOCIO - ECONOMIC FACTORS ON FERTILITY

In the preceding chapters an attempt has been made to high light the degree and direction of association between the socio-economic factors and the proximate variables. In this chapter we shall first look at the spatial variation in mean number of children ever born (MCEB), mean recent number of children ever born (MRCEB), average number of living children and additional children desired and average size of desired family. This is followed by a bivriate and multivariate analysis on the effect of proximate as well as socio-economic factors on fertility.

6.1 Spatial Pattern of Fertility

It is presented in table 6.1 that MCEB (parity) varied from 4.32 in Ezha-and- Wolene to 4.66 in Cheha (a difference of only 0.34 children). At PA level, how ever, there was a difference of 1.77 live born children (that is, 3.7 in Yasya and 5.4 in Agena). MRCEB also varied from 1.37 in Sise - and - Deneb to 1.96 in Aewane, differed by 0.59 children.

At both wereda and PA levels, the difference in number of living children (Shown in Table 6.2) was higher than the difference in MCEB. women in Cheha had on average 0.4 more living children than women in Ezha-and- Wolene wereda; the mean number of surviving children were 4.14 and 3.74

respectively. Among PAS, the difference was higher (1.77 children), that is, 4.72 in Agena and 2.95 in Yasya.

Table 6.1

MCEB and MRCEB by PAS and Weredas, Cheha and ezha- and-Wolene, 1993

PAS and Weredas	MCEB	MRCEB
SISE- & DENEB	5.256	1.372
AYANDA	4.509	1.544
AWANE	4.920	1.960
EMDIBIR	4.450	1.366
CHEHA WEREDA	4.660	1.503
YASYA	3.707	1.862
CHEZA-SEFER	4.333	1.912
ZIGBA BOTO	4.392	1.784
AGENA	5.383	1.766
WKIYE	3.808	1.154
SHEBRADEN	4.560	1.773
EZHA- AND - WOLENE	4.316	1.684
TOTAL	4.46	1.606

Source: Own Survey.

Because of the variation in the number of living children, there was a spatial difference in mean number of additional children desired. It is presented in Table 6.2 that additional number of children desired varied from 3.26 in Cheha to 4.10 in Ezha - and - Wolene wereda, where_as, at PA level it varied from 2.72 in sise-and-Deneb to 5.55 in Wkiye (a difference of 2.83 children).

Table 6.2.

Mean Number of Living Children, Additional Children Wanted and Desired Family Size by PAS, weredas and Total, Cheha and Ezha-and-Wolene, 1993

PAS and Weredas	Living Children	Additional Children Desired*	Desired Family Size*
SISE- & DENEB	4.61	2.72	7.33
AYANDA	3.67	4.06	7.73
AWANE	4.06	4.44	8.50
EMDIBIR	4.19	2.91	7.1
CHEHA WEREDA	4.14	3.26	7.40
YASYA	2.95	5.52	8.47
CHEZA-SEFER	3.65	4.03	7.68
ZIGBA BOTO	3.58	4.55	8.11
AGENA	4.72	5.08	9.80
WKIYE	3.31	5.55	8.86
SHEBRADEN	3.80	4.09	7.89
EZHA-&-Wolene	3.74	4.62	8.36
TOTAL	3.84	4.11	7.96

Source: Own Survey

* n= 351; 161 women said up-to-God and 169 were infecund.

As a result, the desired family size (see Table 6.2) on average, varied from 7.4 in Cheha to 8.36 in Ezha- and-Wolene; differed by about one child. Among PAS, the range was great; the lowest (7.1) and the highest (9.8) were in Emdibir and Agena respectively (a difference of 2.7 children). For the whole sample, mean additional number of children desired for women and men were 4.11 and 5.05 respectively, and the average desired family sizes were 7.96 for women sample and 10.39 for men sample (n= 106, excluding up-to- God responses and

infecund ones). So men desired, on average, 2.43 more children than women.

Infact, additional number of children desired is a function of, among other things, number of living children that normally increases with advancing age of mother. Among the study population (as shown in Table 6.3), mean number of living children increased monotonically from 0.63 in age group 15-19 up to a peak of 5.41 for oldest cohort (45-49).

Table 6.3.

Mean Number of Surviving Children, Additional Children Desired and Desired Family Size by Five Years Age Group of Women, Cheha and Ezha- and- Wolene Wereda, 1993

Age Groups	Surviving Children	Additional Children desired	Desired Family Size.
15-19	0.6340	5.54	6.17
20-24	1.5205	5.76	7.28
25-29	2.7594	4.48	7.24
30-34	4.0507	4.06	8.11
25-39	4.7260	3.54	8.26
40-44	4.9355	2.82	8.03
45-49	5.4112	4.09	9.53
Total	3.8473	4.11	7.96

Source: Own Survey

On the other hand, generally, average number of additional children desired declined progressively from the youngest to the oldest cohorts, except a break at ages 20-24 and 45-49. Inspite of the fact that they had more surviving children, women aged 45-49 wanted about one more children than women aged 40-44. This is perhaps because of fear of child

mortality among the oldest cohorts who lost on average 1.53 children compared to women aged 40-44 who suffered a loss of 1.09 children.

Similar observations and explanations were documented by Assefa (1990: 220) in his study of Shewa and Arsi regions.

6.2. The Proximate Determinants and Fertility

It has been shown in the literature that the proximate variables are the most direct determinants of fertility. Here, an attempt is made to make a bivariate and multivariate analysis on the effect of proximate variables(marriage factors, breast-feeding, postpartum amenorrhoea and postpartum sexual abstinence. In addition, the relationship between perceived value of children and knowledge of family plannin and children ever born and RCEB is considered. Multiple and stepwise multiple regression are conducted to determine the combined and independent effect of the explanatory variables on fertility.

6.2.1. Marriage Factors and Fertility

The Marriage Factors considered in this study were marital status (currently married and widowed and divorced) age at first marriage, duration of marriage, frequency of marriage, incidence of spousal separation and types of marital union.

6.2.1.1. Marital Status, Age at First Marriage and Duration of Marriage

As presented in Table 6.4 in all cases except in Emdibir and Zigbaboto, MCEB was higher among widowed and divorced (were only 3) women than among currently married ones. The difference varied from (excluding Wkiye) 1.74 in sise-and-Deneb to as high as 4.74 in Yasya and 6.39 in Agena. MCEB was higher among widowed women by 0.93 in Cheha by 2.7 in Ezha-and Wolene and by 1.81 for the whole sample. Higher fertility among the widowed /divorced/ women was due to their age (all were aged above 36 years at the survey date). Previous study in Addis Ababa (Alemseged, 1989) found similar results. But several other studies in Ethiopia and else where (as indicated in the literature) documented higher fertility among currently married women than among all others.

Table 6.4

Mean Number of Children Ever Born (MCEB) By Current Marital Status, PAS and Weredas, Cheha, Ezha-and-Wolene, 1993

PAS and Weredas	Currently Married	Widowed and Divorced
SISE & DENEB	5.93	7.67
AYANDA	4.18	7.33
AWANE	4.92	0.0
EMDIBIR	4.47	4.29
CHEHA WEREDA	4.59	5.52
YASYA	3.26	8.00
CHEZA-SEFER	4.21	6.00
ZIGBA BOTO	4.40	4.00*
AGENA	5.11	11.50
WKIYE	3.79	4.33
SHEBRADEN	4.23	7.25
EZHA- AND - WOLENE	4.12	6.85
TOTAL	4.33	6.14

Source: Own Survey
*Based on two women

6.2.1.2. Age at First Marriage, Duration of Marriage and Fertility

Across all PAS (Table 6.5) there is a monotonic decline in MCEB from 4.9 children for women married under the age of 16 to 3.22 children for those married at age 20 or older. This monotonic decline was found in all PAS and weredas but varied in size. In Ezha-and-Wolene, there was a difference of 1.32 children between the youngest and the oldest age-at-first-

marriage groups. By comparison, in Cheha the corresponding difference was 2.17 children. The greatest range (4.62 children) was found in Aewan.

The fertility depressing effect of late age at marriage is substantiated by a significant, though weak, negative correlation coefficient (r= -0.15) between age at first marriage and number of children ever born for the whole sample.

Table 6.5
Mean Number of Children Ever Born (MCEB) By Age at First Marriage, Duration of Marriage, PAS, Weredas and Total, Cheha and Ezha-and- Wolene 1993

PAS and Weredas	Age at First Marriage in years			Duration of Marriage in Years		
	<16	16-19	>19	<10	11-20	>20
SISE & DENEB	6.06	5.33	4.41	2.15	5.27	7.93
AYANDA	5.11	4.86	2.11	2.44	5.43	5.61
AWANE	5.65	4.81	1.03**	2.20	4.87	7.00
EMDIBIR	4.97	4.25	2.83	2.45	4.98	5.95
CHEHA WEREDA	5.27	4.50	3.10	2.37	5.25	6.27
YASYA	4.26	4.62	2.60**	1.54	4.24	6.62
CHEZA-SEFER	4.71	4.08	3.75	2.82	4.84	6.20
ZIGBA BOTO	5.03	4.23	2.75	2.21	4.63	6.70
AGENA	4.64	6.30	3.00**	2.50	5.59	5.86
WKIYE	3.98	3.56	2.40	2.00	4.22	4.74
SHEBRA DEN	5.04	4.00	3.50	1.89	4.83	6.27
EZHA- AND - WOLENE	4.65	4.15	3.33	2.03	4.77	6.05
TOTAL	4.90	4.30	3.22	2.18	4.95	6.15

Source: Own Survey
** Based on two women

A similar weak negative association (r= -0.10) though insignificant was also observed at PA level; a PA with lowest mean age at first marriage (16.1 years -Agena) had the highest MCEB (5.38 children). Inverse relationship between age at first marriage and fertility has been documented by some other previous studies too. (eg., Alemeseged, 1989; Abdulahi, 1989, Greonword, 1989 and Hussien, 1992).

The difference in MCEB between women married at age below 16 and those married at age 16-19 was lower (0.77, 0.5 and 0.6 children for cheha, Ezha-and welene and for the whole sample respectively) than the difference between those who married at age 16-19 and at age 20 or older (1.4, 0.82 and 1.08 children, for the two weredas and for the whole sample respectively). This result reinforces the fact which has been observed in chapter three- there was about 2-3 years difference between age at first marriage and age at first birth indicating the effect of adolescent subfecunlity.

It is worth noting the fact that older women married for the first time earlier than the younger ones as indicated by an inverse association (r= -0.02, for the whole sample) between women's age and age at first marriage.

In a population where practice of birth control is absent or very minimal, duration of marriage is a strong proximate factor affecting fertility, because it determines the length of exposure to the risk of conception. This fact is born out by the data from the survey. There is a significant and strong positive correlation (0.64, for the whole sample) between time

spent in marital union and number of children ever born. Women who married for 20 or more years had about four more children than those who married for less than ten years (Table 6.5). Among PAS, the range is 4 to 5 children and the correlation coefficient is 0.59.

6.2.1.3. Frequency of Marriage and Incidence of Spousal Separation and Fertility

In a non-contracepting population, at any given duration of marriage, number of times married and incidence of temporary spousal separation are important components affecting the length of exposure to the risk of pregnancy.

It is presented in Table 6.6 that (with out controlling for age) women married once had more MCEB than those who married more than once in only three PAS and in Cheha Wereda.

Table 6.6

Average Number of Children Ever born (MCEB) and Recent CEB by Number of Times Married Incidence of Spousal Separation, PAS, Weredas and Total, Cheha and Ezha-and - Wolene, 1993

PAS and Weredas	Number of Times Married		Incidence of Separation	
	Once	More than Once	Ever Separated	Never Separated
SISE- & DEN.	5.5 (1.38)	4.33(1.33)	6.20(1.20)	5.25(1.00)
AYANDA	4.52(1.57)	4.64(1.45)	4.39(1.58)	5.26(1.41)
AWANE	5.13(2.04)	2.50(1.00)	4.76(1.91)	6.75(2.50)
EMDIBIR	4.30(1.48)	4.88(1.32)	4.41(1.40)	4.49(1.69)
CHEHA WEREDA	4.67(1.55)	4.54(1.30)	4.60(1.50)	5.17(1.57)
YASYA	3.65(1.89)	3.71(2.43)	3.57(1.78)	4.0(1.91)
CHEZA-SEFER	4.14(1.96)	5.43(2.43)	4.41(2.00)	3.63(2.12)
ZIGBA BOTO	4.29(1.77)	5.22(1.89)	4.32(1.75)	5.38(2.25)
AGENA	5.45(1.94)	4.87(1.30)	5.57(1.73)	4.44(2.00)
WKIYE	3.90(1.27)	3.00(0.66)	3.71(1.27)	4.00(1.20)
SHEBRA DEN	4.46(1.94)	5.10(0.98)	4.46(1.74)	5.50(2.60)
EZHA- AND - WOLENE	4.28(1.75)	4.50(1.44)	4.29(1.19)	4.51(2.18)
TOTAL	4.45(1.65)	4.52(1.38)	4.43(1.62)	4.77(1.78)

Source: Own Survey

Figures in parenthesises are mean recent CEB.

For instance, the former had one child more in Sise-and-Deneb and two children more in Awane than the latter. On the other hand, average recent CEB was consistently higher among once-married- than among more than - once - married women in 7 PAS in both weredas and for the whole sample. The difference was 0.25 in Cheha, 0.31 in Ezha - and - Wolene and 0.20 children for the whole sample. In some PAS like Aewan, Wklye and Shebraden, there was a difference of about one child. The negative impact of high frequency of marriage on number of children over born is substantiated by a negative, though moderate and insignificant, coefficient of correlation (r= - 0.47) between proportion married more than once and MCEB.

The inverse association between MCEB and frequency of remarriage was obtained by Abdulahi (1989) in Addis Ababa, Alemaya and Metu. In addition ,it has been observed in 8 sub Sahara Africa countries that women (aged 40 and over), who married more than once had lower average CEB than those who married once (UN,1987:232). Prolonged periods of spousal separation (up to 5 or two months) has been found to have raised the waiting time for conception by nearly a year in Bangladesh (chowdhury, 1979, cited by Assefa, 1990: 291).

The survey data has also shown (Table 6.5) that MCEB and average recent CEB were higher among women who had never separated than among those who had ever been separated in 7 and 6 PAS respectively, and in both weredas and for the whole

sample. The differences were within the range of one child in Sise-and-Dereb and 2 children in Aewan.

The simple correlation coefficients between incidence of spousal separation and number of children ever born and number of recent CEB, though very weak, are negative and statistically significant at 0.05 level (r= -0.08 and -0.09, for the whole sample).

6.2.1.4. Types of Marital Union and Fertility

Although some studies (as shown is the literature) have found that polygyny tends to reduce individual fertility, the data from the survey (Table 6.7) does not fully support them.

It is only in 4 PAS where percentage of polygamous unions were highest that MCEB was slightly lower (between 0.11 and 0.52 children) among women who reported themselves to be in current union with co-wives than among women in monogamous marriages. In all others, the contrary was true, although the difference were not sizeable except in Shebraden where women in polygamous marriage had 1.51 more children than women in monogamous marriage. Since incidence of monogamy decreases with age (r= -0.10 for the whole sample) the result is not conclusive.

Table 6.7

MCEB and Mean Recent CEB by Types Marital Union PAS, Weredas and Total, Cheha and Ezha -and - Wolene, 1993

PAS and Weredas	POLYGAMY		MONOGAMY	
SISE- & DENEB	5.00	(0.86)*	5.31	(1.49)
AYANDA	4.65	(1.44)	4.54	(1.52)
AWANE	4.67	(0.67)	4.94	(2.04)
EMDIBIR	5.42	(1.75)	4.35	(1.41)
CHEHA WEREDA	5.00	(1.42)	4.62	(1.51)
YASYA	3.80	(2.50)	3.64	(1.96)
CHEZA SEFER	4.86	(2.14)	4.22	(2.00)
ZIGBA BOTO	4.67	(2.67)	4.38	(1.71)
AGENA	4.91	(2.00)	5.39	(1.69)
WKIYE	5.86	(2.29)	3.51	(1.06)
SHEBRA DEN	6.00	(1.33)	4.49	(1.82)
EZHA- AND - WOLENE	5.03	(2.13)	4.24	(1.63)
TOTAL	5.01	(1.81)	4.40	(1.58)

Source: Own Survey. * Figures in parenthesis are MRCEB.

A study of eight sub-Sahara African countries by UN (1987:333) has revealed that except in Moritania, Kenya and Coted'voire where women (aged 40 & over) in polygamous union, had one children more than women in monogamous union, in all others achieved fertility was either almost identical or the difference was not considerable.

Therefore, the finding from this study substantiates the non-uni-directional relationship between types of marital union and fertility.

The observed lower fertility of polygamous marriage in three PAS may be explained by lower coital frequency not because of lack of privacy (no woman reported that she was living with the other wife in the same house) but due to the rotation of the husband. More than 50% of women reported that the other wife was living out side of the village (13.5% said in other village, 23% in other PAS; 15% in other weredas and towns); 35% said in the same compound, 14% in the same village.

Another factor that is claimed to reduce fertility among polygamous union is favoritism. However, in the survey only 15% of women concerned reported that they were disfavoured ones; (their husbands spent much of his time with the other wife) and the majority (67%) said that they were more /most/ favored ones; the remaing 18% reported that the husband was democratic (sharing his time equally among his wives).

6.2.2. Breast - Feeding, Postpartum Amenorrhoea, Postpartum Sexual Abstinence and Fertility

The Fertility depressing effect of breast-feeding, (intensity, frequency and duration) through increasing postpartum amenorrhoea and associated postnatal taboos on sexual intercourse is a well known fact in many of sub-Sahara African societies (Bongaarts, 1978; Bongaarts, et al., 1984; lesthaeghe 1981 and UN, 1987).

This section is devoted to the analysis of the

relationship between length of Breast-feeding, postpartum amenorrhoea and postpartum sexual abstinence during the last-closed birth interval and fertility.

6.2.2.1. Breast-Feeding and Fertility

It is evident from Table 6.7 that both mean number of children ever born (MCEB) and recent mean number of children ever born(RMCEB) were declining with increasing duration of breast-feeding in six PAS, one wereda (Ezha-and - Wolene) and for the whole sample. In the remaining four PAS and one wereda (Cheha) the relationship was curvi-linear; both indices of fertility were declining up-to 19-24 months of breast-feeding and beyond two years fertility increased.

This is mainly due to the fact that protection of prolonged breast-feeding against pregnancy decreases after 20 months (kent, 1981, cited by Alemseged and page and Lesthaegha, 1981).

Table 6.8

MCEB and MRCEB by Mean Duration of Breast-Feeding PAS, Weredas and Total, Cheha and Ezha- and - Wolene, 1993

PAS and Weredas	< 19 months	19-24 months	> 24 months
SISE- & DENEB	5.20 (1.75)*	4.80 (1.50)	7.20 (0.7)
AYANDA	5.42 (1.89)	4.25 (1.42)	3.00 (0.5)
AWANE	5.69 (2.88)	4.57 (1.62)	5.75 (1.03)
EMDIBIR	5.12 (1.63)	4.75 (1.52)	4.74 (1.00)
CHEHA WEREDA	5.14 (2.51)	5.02 (1.69)	5.29 (1.36)
YASYA	6.00 (3.29)	3.96 (1.96)	4.80 (2.00)
CHEZA SEFER	5.50 (2.50)	4.78 (1.80)	4.67 (1.80)
ZIGBA BOTO	5.90 (1.70)	4.76 (2.24)	2.79 (1.03)
AGENA	6.56 (3.11)	6.06 (2.12)	3.75 (1.00)
WKIYE	4.96 (1.37)	4.07 (1.64)	3.68 (1.04)
SHEBRA DEN	4.80 (2.14)	4.45 (1.50)	5.77 (2.14)
EZHA- AND - WOLENE	5.39 (1.78)	4.48 (1.98)	4.67 (1.63)
TOTAL	5.26 (2.16)	4.71 (1.86)	4.87 (1.47)

Source: Own Survey.
* Figures in Parenthesis are MRCEB.

The differences in MCEB between the first and the second categories of length of lactation were 0.12, 0.91 and 0.51 children for Cheha, Ezha- and - Wolene weredas and for the whole sample respectively.

In the some PAS such as Agena, Ayanda, Aewan, Yasya, and Zigbaboto the ranges in MCEB between these two categories were more than one child. The difference between the lowest and the highest categories, on the other hand, was very large in Ayanda(2.42) Zigbaboto (3.11) and wkye (2.83) children.

The general inverse association between fertility and length of partial breast-feeding was ascertained by a

statistically valid negative correlation coefficients (-0.65 and -0.08) at the PA level and for the whole sample respectively, though the latter is very weak.

This finding is inline with previous studies in Ethiopia that have demonstrated the fertility-limiting effect of prolonged breast-feeding (Elsa, et al., 1970; Kebebew, 1973; Alemseged, 1989 and Abdulahi, 1989).

6.2.2.2. Postpartum Amenorrhoea and Fertility

Postpartum amenorrhoea is the function of Breast-feeding, though the relationship is not always linear. According to page and Lesthaeghe (1981:8) extending lactation beyond an average of about two years may not have a substantial positive effect on duration of amenorrhoea.

In this study, the association between average length of partial breast-feeding and mean length of lactational amenorrhoea (presented in table 6.8) at PAS level is positive (r= 0.75) and statistically valid.

Table 6.9.

Average Length of Partial Breast-Feeding and Postpartum Amenorrhoea by PAS, Weredas and Total, Cheha and Ezha- and -Wolene, 1993

PAS and Weredas	Length of Breast Feeding- in months	Length of Postpartum Amenorrhoea in months.
SISE & DENEB	24.6	16.7
AYANDA	26.0	21.2
AWANE	23.9	17.4
EMDIBIR	22.0	14.6
CHEHA WEREDA	23.6	16.24
YASYA	27.1	17.60
CHEZA-SEFER	27.2	21.75
ZIGBA BOTO	27.3	17.40
AGENA	21.8	13.14
WKIYE	25.1	16.00
SHEBRA DEN	25.5	15.90
EZHA- AND - WOLENE	25.3	17.24
TOTAL	24.8	16.72

Source: Own Survey

PAS with longest duration of lactation (about 27 months) were associated with longest mean duration of postpartum amenorrhoea (21-22 months) and PAS with shortest duration of breast-feeding (21-22 months) had the shortest average length of lactational amenorrhoea (13-15 months).

However, as shown in Table 6.9, the relationship between length of postpartum amenorrhoea and fertility was not consistent especially at PA level. Although difference were, in some cases, very little, in half of sampled PAS,in one wereda and for the whole sample mean duration of lactational amenorrhoea,was related to decreased fertility. For instance the differencein MCEB between the first category (less than 10

months) and the second one (10 or more months) ranged from 0.31 in Sise- and - Deneb to one child in Yasya.

Table 6.10

MCEB and Recent RCEB by Length of Postpartum Amenorrhoea by PAS, Weredas and Total, Cheha and Ezha-and- Wolene, 1993

PAS and Weredas	Less than 10 months		over 10 months.	
SISE & DENEB	5.75	(1.50)	5.44	(1.40)
AYANDA	3.75	(1.25)	4.38	(1.50)
AWANE	5.25	(1.70)	5.46	(2.46)
EMDIBIR	5.12	(1.66)	4.43	(1.48)
CHEHA WEREDA	4.56	(1.45)	5.02	(1.64)
YASYA	4.33	(2.00)	4.23	(1.29)
CHEZA SEFER	5.00	(2.67)	4.09	(1.76)
ZIGBA BOTO	4.25	(1.26)	4.81	(1.90)
AGENA	6.00	(2.00)	6.00	(2.53)
WKIYE	4.66	(1.67)	4.61	(1.53)
SHEBRA DEN	2.67*	(1.00)	5.26	(2.03)
EZHA & WOLENE	5.22	(1.77)	4.85	(1.95)
TOTAL	5.06	(1.59)	4.98	(1.79)

Source: Own Survey * Based on two women

Figures in parenthesis are MRCEB

The observed inconsistency is perhaps due to the way how the data is grouped or the problem of under or over estimation of the retrospective information on length of postpartum amenorrhoea or probably to higher age of those who were amenorroeic.

6.2.2.3. Postpartum Sexual Abstinence and Fertility

Cultural restrictions on postnatal sexual intercourse is a common phenomena in many parts of sub-Saharan Africa, though the way of organizing the taboo, the degree of social control, the severity of the sanctions in the case of violation and the length vary from population to population (UN, 1987 and page and Lesthaeghe 1981).

It was found out that among sub-Saharan African countries considered, Sudan and Kenya had the shortest period of abstinence, averages of about 2.6 and 2.9 months. Most of the remaining countries had a period ranging from 10 to 13 months (UN, 1987: 335).

In this study, the survey data (Table 6.11) revealed that, though question on postpartum abstinence was projective and had no time reference, average CEB and recent CEB declined with increased period of sexual abstinence in six PAS, for both weredas and the whole sample.

Compared to postpartum amenorrhoea and sexual abstinence, duration of breast-feeding is found to be more strongly, associated with fertility. Therefore, it is used in the regression analysis.

Table 6.11.

Average CEB and Recent CEB by Length of Postpartum Sexual Abstinence, by PAS, Weredas and Total, 1993

PAS and Weredas	1-2 months		3-5 months	
SISE & DENEB	5.00	(1.11)	4.40	(1.80)
AYANDA	5.83	(2.01)	4.33	(0.66)
AWANE	5.15	(2.43)	4.00*	(2.50)*
EMDIBIR	4.34	(1.46)	4.88	(1.54)
CHEHA WEREDA	4.73	(1.53)	4.15	(1.31)
YASYA	4.00	(2.60)	3.16	(1.26)
CHEZA-SEFER	3.88	(2.00)	4.00*	(2.00)*
ZIGBA BOTO	5.86	(2.57)	5.20	(2.40)
AGENA	4.71	(1.85)	6.00*	(1.00)*
WKIYE	5.32	(2.00)	4.00*	(2.90)
SHEBRA DEN	4.69	(2.08)	4.60	(2.30)
EZHA- & - WOLENE	4.93	(2.23)	4.83	(1.82)
TOTAL	4.81	(1.79)	4.60	(1.60)

Source: Own Survey
* based on two women
Figures in Parenthesis are MRCEB

6.2.3. Perceived Economic and Old Age Security value of Children and Fertility

It has been noted in the literature that parent expecting child support tend to have higher actual and desired fertility than those who want children mainly for emotional reasons.

In this section the relationship between fertility and types of reasons for having children, degree of expected reliance on children in the old age and perceived dis/advantage of large family are discussed.

6.2.3.1. Reasons for Having Children and Fertility

It is evident from Table 6.12 that, though differences vary (from PA to PA) and are in some cases very little, women desiring children primarily for love and Continuity of the family name /clan/ had larger number of children ever born than those who need children mainly for old age security and help before old age in 8 PAS, two weredas and for the whole sample. In the Remaining two PAS (zigbaboto and wkye) the reverse was true; with a difference of 0.36 and 0.41 children respectively. The largest differences among PAS were 0.83 and 0.93 children in Aewen and Yasye respectively. The lowest ranges were in Ayanda (0.04) and Agena, (0.05) children ever born. In Cheha, Ezha- and- Wolene wereda and for the whole sample differences were relatively high, 0.65, 1.49 and 1.07 children born alive respectively.

On the other hand, women who desire children primarily for stabilizing marriage and for social acceptance had the smallest number of children ever born in all but two PAS (size - and - Denebe and Shebraden), in two weredas and for the whole sample.

This implies that among younger women (as age is positively associated with fertility) the most significant reason for having children is for stabilizing marriage and for social acceptance.

Table 6.12

Mean Number of Children Ever born by Most Important Reasons for Having Children, PAS, Weredas, Cheha, Ezha-and-Wolene, 1993

PAS and Weredas	Love of children & continuity of the Family /clan/ name	Old age Security and help before old age	Marriage stability and social acceptance
SISE & DENEB	5.04	4.73	6.87
AYANDA	4.90	4.86	3.60
AWANE	5.47	4.61	4.63
EMDIBIR	4.63	4.27	3.78
CHEHA WEREDA	5.0	4.35	4.37
YASYA	4.22	3.29	3.89
CHEZA SEFER	4.45	4.39	3.97
ZIGBA BOTO	4.33	4.76	3.78
AGENA	5.36	5.31	4.83
WKIYE	3.62	3.97	3.56
SHEBRA DEN	4.75	4.07	4.88
EZHA-AND-WOLENE	5.82	4.33	3.60
TOTAL	5.41	4.34	3.07

Source: Own Survey

Even after controlling for women's education, religion and economic status, the pattern of relationship observed above was not substantially altered (Table 6.13). That is, among different socio-economic groups (i.e, illiterates, women having above primary level education, Christians and both low and high economic status groups), MCEB was highest for women who considered love of children and continuity of the family name as primary motive for having children. Among women with primary level education and Muslims, however,the highest MCEB

was for women who assigned first rank to old age security and help before old age.

Table 6.13

Mean Number of Children Ever born by Women's Socio-Economic Characteristics and Most Important Reasons for Having Children, Cheha, Ezha-and-Wolene, 1993

Socio-Economic Characteristics	Most Important Reasons for Having Children		
	Love of Children & Continuity of the Family Name	Old age Security and Help Before Old Age	Marriage Stability & Social Acceptance
Education			
Illiterate	4.77	4.43	4.41
1 up to 6 grade	3.56	3.62	2.14
Above 7th grade	4.04	3.50	2.67
Religion			
Christian	4.79	4.34	4.23
Islam	4.15	4.34	4.34
Economic Status			
Low	4.50	4.23	4.14
High	4.87	4.68	4.76

Source: Own Survey.

The correlation analysis supports the above observation. For the whole sample there is a significant (but very weak) negative association between women who assigned first rank to reasons other than love of children and continuity of the family /clan/ and MCEB (r= -0.08) and RCEB (r= -0.07) for the whole sample. Among the PAS also the same pattern of relationship was observed (r= -0.42) between MCEB and proportion of women considered old age security and help before old age most important. And the correlation between MCEB and percent assigned first importance

to love of children and continuity of the family name was positive (r= 0.35). More over, this particular reason was inversely related to average number of additional children wanted (r= -0.26) and average desired family size (r= -0.15), whereas proportion assigned first rank to economic and social reasons were found to be directly associated with both mean number of children wanted and average desired family size (r= 0.26 and 0.39 respectively). However, none of these coefficients are significant at 0.05 level. Nevertheless, they indicate that number of additional children wanted is higher among women who considered economic and social reasons as the most important motives for having children than among the other groups.

6.2.3.2. Degree of Reliance on Children in the Old Age and Fertility

The data presented in table 6.13 indicates that in PAS where there are large proportion of women who expect to depend heavily on children in the old age, mean number of children ever born is low (r= -0.24), but average number of children desired is high (r= 0.61). This implies that women who expect heavy reliance on children tend to have higher number of additional children desired than those who are doubtful about old age security value of children (the coefficients of correlation between proportion uncertain and MCEB and ANCW are 0.21 and -0.51 respectively).

Table 6.14

MCEB, Average Number of Children Wanted (ANCW) and Degree of Reliance on Children in the Old Age by PAS, Weredas and Total, Cheha and Ezha-andene, 1993

PAS and Weredas	MCEB	ANCW	Degree of Reliance on Children	
			% very High	% Uncertain
SISE & DENEB	5.256	2.72	76.7	16.3
AYANDA	4.509	4.06	80.7	19.3
AWANE	4.920	4.44	88.0	6.0
EMDIBIR	4.450	2.91	82.4	17.6
CHEHA WEREDA	4.66	3.26	82.2	15.1
YASYA	3.707	5.52	89.7	6.5
CHEZA.S	4.333	4.03	82.5	10.5
ZIGBA BOTO	4.392	4.53	82.4	17.6
AGENA	5.383	5.08	91.5	8.5
WKIYE	3.808	5.55	94.9	3.8
SHEBRA DEN	4.560	4.09	86.7	13.3
EZHA-AND-WOLENE	4.316	4.62	87.9	10.0
TOTAL	4.46	4.10	85.5	12.2

Source: Own Survey

6.2.3.3. Perceived Di/ advantage of Large Family

As shown in Table 6.15 PAS with larger proportion of women who considered large family as advantageous are associated with lower MCEB (r= -0.55). On the other hand, percent who said disadvantageous and MCEB is positively related (r= 0.12). Though none of these coefficients are significant, they indicate that women with large number of

live born children perceived that it is disadvantageous to have as many children as possible. Besides, proportion who said both advantageous and disadvantageous increased with MCEB (r= 0.62). Moreover, as explained by a positive coefficient of correlation (r= 0.09) average number of additional children wanted (ANACW) is higher among women who feel large family is advantageous.

Table 6.15

MCEB and ANACW Proportion of Women by Perceived Di/ Advantage of Having as Many Children as Possible, by PAS, Weredas and Total, Cheha and Ezha- and - Wolene, 1993

PAS and Woredas	MCEB	ANACW	% Said Advan.	% Said Disadv.	% Said Both Advantageous & Disadv.
SISE- & DENEB	5.26	2.72	34.9	20.9	39.5
AYANDA	4.51	4.06	59.6	3.5	33.3
AWANE	4.92	4.44	66.0	6.0	28.0
EMDIBIR	4.45	2.91	52.2	7.0	38.7
CHEHA WEREDA	4.66	3.26	53.8	8.6	36.0
YASYA	3.71	5.52	65.5	5.2	25.9
CHEZA SEFER	4.33	4.03	64.4	7.0	17.5
ZIGBA BOTO	4.39	4.53	81.1	4.1	14.9
AGENA	5.38	5.08	51.1	4.3	42.6
WKIYE	3.81	5.55	55.1	5.1	38.5
SHEBRA DEN	4.56	4.09	50.7	4.0	45.3
EZHA- AND - WOLENE	4.32	4.62	62.2	5.1	31.1
TOTAL	4.46	4.10	58.6	6.6	32.2

Source: Own Survey

In order to see the actual fertility difference, MCEB and MRCEB by perceived di/advantage of large family is presented in table 6.16. It is evident from the Table that MCEB and MRCEB are highest among women who perceived that large family is disadvantageous in six PAS, in both weredas and for the whole sample. The difference in MCEB between women who considered large family as disadvantageous and as advantageous was lowest in wkye (0.83) and medium in Emdibir (1.04) and Ayanda (1.97) and highest in Shebraden (3.37) and Aewan (34.39). It was 1.11 Cheha, 0.45 in Ezha - and - Wolene and 0.89 for the whole sample. The range in MRCEB was more than one children in Aewan, Yasya, Wkye, and Shebraden.

The difference remain substantial even after controlling for women's education, religion and economic status. As could be observed from Table 6.17 generally, irrespective of women's socio-economic background both MCEB and MRCEB were highest among women who said that having as many children as possible is disadvantageous.

Table 6.16

MCEB and MRECEB by Perceived Disadvantage of Having as Many Children as Possible, PAS, Weredas and Total, Cheha and Ezha-and-Wolene

Pas and	Advantage ous		Disadvantage ous	
Weredas	MCEB	MRCEB	MCEB	MRCEB
SISE- & DENEB	4.91	1.82	5.67	1.27
AYANDA	6.0*	1.50	4.03	1.53
AWANE	8.33	3.33	4.94	2.09
EMDIBIR	5.2	0.9	4.16	1.44
CHEHA WEREDA	5.5	1.61	4.44	1.54
YASYA	6.33	3.00	3.61	1.77
CHEZA SEFER	2.20	1.33	4.56	1.87
ZIGBA BOTO	4.03	1.33	4.38	1.65
AGENA	4.0*	2.00	4.5	1.67
WKIYE	4.5	1.5	3.67	0.91
SHEBRA DEN	8.0	3.0	4.63	1.84
EZHA- AND - WOLENE	4.67	2.13	4.22	1.58
TOTAL	5.20	1.80	4.31	1.57

Source: Own Survey
* Based on two women

Table 6.17

MCEB and MRCEB by Women's Socio-Economic Characterstics and Perceived Disadvantage of large family, Cheha and Ezha- and -Wolene, 1993

Socio-Economic Characterstics	Advantageious		Disadvantageious		Both Advantagious & Disad	
	MCEB	RCEB	MCEB	RCEB	MCEB	RCEB
Education						
Illitreate	4.48	1.71	4.98	1.65	4.46	1.71
1-6 Grade	3.00	1.52	4.00	1.63	4.06	1.44
7th Grade & above	3.4	1.64	3.00*	2.00*	4.46	1.92
Religion						
Islam	3.94	1.49	6.5	2.45	4.42	1.78
Christianity	4.44	1.64	4.27	1.48	4.80	1.66
Economics Status						
Low	4.19	1.52	4.56	1.86	4.53	1.75
High	4.62	1.65	6.50	1.83	4.89	1.59

Source: Own Survey

* Based on two women

The difference in MCEB between the second and the first categories (see Table 6.17) was 0.5 among the Illiterates; 1 among women with primary level education; 2.56 among Muslims; 0.37 and 1.88 among women of low and high economic status respectively. MRCEB is also show a more or less similar pattern.

The foregoing analysis shows that perceived value of children depends on the number of children ever born even after some socio-economic backgrounds of women have been controlled.

6.2.4. Attitude Towards the Use of Contraception and Fertility

We have seen in chapter 4 that among the study population ever use of contraception is extremely low (only 1.5%) However, a considereable proportion of respondents (both sex) had the knowledge and positive attitude towards the use of method of family planning. Therefore, it is necessary to investigate the association between attitude towards the practice contraception and fertility.

6.2.4.1 Attitude Towards the Use of Contraception and Fertility

It can be observed from Table 6.18 that in seven PAS, both weredas and for the whole sample, MCEB and MRCEB were higher among women who had positive attitude towards the practice of contraception. The difference in MCEB among PAS was between about 1-2 children; it was 1.13 in Cheha, 0.85 in Ezha - and - Wolene and 1.01 among all women studied. This demonstrates that women with a few number of children ever born tend to disapprove the practice of birth control. This fact is confirmed by a positive (though not significant at 0.05 level) association between percent approving the practice of contraception and MCEB (r= 0.56) and a negative correlation between percent disapproving the use of contraception and MCEB (r= -0.38). For the whole sample also disapproval of the use of contraception and CEB are inversely related (r= -0.15, significant at 0.05 level). Like wise, the

demand for additional number of children was higher among women who disapproved the use of birth control and who lacked interest to use it in the future.

Table 6.18

MCEB and MRCEB by Attitude Towards the Use of Contraception, PAS, Weredas and Total, Cheha, Ezha-and - Wolene, 1993

Pas and	Approved		Disapproved	
Weredas	MCEB	RCEB	MCEB	RCEB
SISE- & DENEB	6.04	1.50	4.17	1.28
AYANDA	5.29	1.94	4.12	1.48
AWANE	4.09	1.99	4.53	1.80
EMDIBIR	4.92	1.74	4.33	1.31
CHEHA WEREDA	5.40	1.72	4.27	1.36
YASYA	4.00	2.45	3.52	1.73
CHEZA SEFER	4.40	1.93	4.23	2.00
ZIGBA BOTO	4.29	2.29	4.51	1.57
AGENA	6.27	2.27	4.81	1.53
WKIYE	3.56	1.10	3.72	1.47
SHEBRA DEN	3.85	1.50	4.69	1.85
EZHA- AND - WOLENE	4.97	1.82	4.12	1.60
TOTAL	5.19	1.77	4.18	1.90

Source: Own Survey

The correlation, coefficients between proportion approving and disapproving the use of contraception and avrage number of children wanted are -0.21 and 0.33 respectivelly, and the association between proportion intending to use contraception in the future and average number of watned children is negative (r= -0.32). Though none of these coefficients are significant at 0.05 level, they nevertheles, indicate the direction of association.

The positive attitude towards the use of birth control among women with large number of children holds true even after controlling for the socio-economic background of the women interviewed (Table 6.20)

Table 6.19

MCEB and MRCEB By Women's Socio-Economic Background, Attitudes Towards the Use of Contraception, Cheha, and Ezha-and -Wolene, 1993

Socio-Economic Back ground	Disadvantagious		Advantagious	
	MCEB	RCEB	MCEB	RCEB
Education				
Illitreate	5.22	1.91	4.37	1.54
1-6 Grade	4.00	1.48	3.13	1.61
7th Grade & above	3.89	2.18	3.75	1.25
Religion				
Islam	5.24	1.83	3.83	1.54
Christianity	4.84	1.91	4.47	1.54
Economics Status				
Low	4.84	1.89	4.15	1.55
High	5.25	1.86	4.61	1.50

Source: Own Survey

Among all socio-economic groups both MCEB and MRCEB (Except among women with primary level education) are higher among women who approved the practice of birth control. The difference in MCEB is highest among Muslims (1.41) and lowest among Christians (0.37) and among women with primary level education (0.14).

6.3. The Effect of Proximate Factors on Fertility: a multivariate Analysis

In the preceding section the focus was on gross association between each proximate variable and fertility of women interviewed. In this section, combined and independent effect of proximate variables (duration of marriage, breast - feeding age at first marriage, frequency of marriage, incidence of spousal separation, current marital status, types of marital union and reasons for having children) on fertility (CEB and RCEB) is analysed using multiple and stepwise regression model.

6.3.1. Multiple Regression Analysis

As presented in Tables 6.21 and 6.22 multiple correlation R^{CEB}. 12345678= 0.5963 shows a significant (F (8/573, 0.005= 39.52) and a linear combination of eight independant variables.

Table 6.20

ANOVA Table of Regression Model For Number of Children Ever-Born (CEB) (Eight Explanatory Variables): Cheha and Ezha- and-Wolene, 1993

Sources of Variation	Degree of Freedom	Sum of Squares	Variance	F-Ratio
Model (Regression)	8	1200.365	150.046	
Residual	573	2175.387	3.796	39.522
Total	581	3375.753		

Source: Own Survey P< 0.005

Table 6.21

Summary of Multiple Regression on CEB (DUM, DBF, AFM, NTM, ISS, MR, FM1 and TRCH2) N= 575

Variables	Regression Coefficient(b)	Beta Coefficients	F	Partial Corr. Coff.
DUM (1)	0.1896	0.6001	273.106*	0.5681
DBF (2)	-0.0435	-0.1560	21.054*	-0.1883
AFM (3)	0.0212	0.0324	0.867	0.0389
NTM (4)	-0.4284	-0.0903	6.126*	-0.1028
ISS (5)	-0.4228	-0.0733	4.655*	-0.0898
MR (6)	0.0675	0.0073	0.042*	0.0086
FMI (7)	-0.3948	-0.0541	2.114**	-0.0606
TRCH2 (8)	-0.3556	-0.0724	4.622*	-0.0894

unadjusted ^{R}CEB.12345678=0.5963 * P<0.005
unadjusted R^2 = 0.3556 ** P<0.05
Adjusted R^2 = 0.3466
P<0.005

Regregression Equation

CEB= 3.723 + 0.190DUM + -0.044 DBF + 0.021 AFM +- D.428NTM +- 0.4228ISS + 0.068MR +- 0.3948 FM1 - 0.356 TRCH2

Cofficient of multiple determination (R^2) indicates that about 35.7% of the varation in CEB is accounted for by the combined effect of these eight proximate variables. When adjusted R^2 equals to 34.7%.

The largest proportion of the variance in CEB is due to duration of marriage (DUM) and breast-feeding (DBF). Duration of marriage alone, with a partial correlation cofficient of $r_{CEB1.2345678}$= 0.5681, accounted for about 32.3% of the variation in CEB among the population under study. It is significant at less than 0.005 level.

Age at first marriage and marital status have made insignificant contribution, only 0.15 and 0.007 % to the total variance in CEB.

All of the independant variable are related to CEB in the expected direction except age at first marriage (AFM) type of marital union (FMI), marital status (MR) and socio-economic reasons for having children (TRCH2). However, the cofficients (b) for AFM and MR are not significant.

The regression cofficients (b) and B (standardized) that indicate the rate of change in CEB as per change in the independant variable are presented in table 6.21. The rate of change produced by the independant variables on CEB can be divided into three groups (the highest, medium and lowest) based on the magnitude of b and B. The highest change is contributed by frequency of marriage (NtM, b= -0.4284) and incidence of spousal separation (ISS, B= -0.4228). The change is medium with a unit change in the number of women in monogamous union (FM1,b=-0.3948) and in number of women who

considered economic and social value of children as the most important reason for having them. (TRCH2,b= -0.3556). The lowest rate of change is attributed to duration, of marriage (DUM, b= 0.1896) and breast - feeding (DBF, -0.0435).

However, when the raw coefficients are standardized (B) the position and the contribution of independant variables is reversed. Duration of marriage (DUM, B= 0.60) and breast-feeding (DBF, B= -0.156) became the most important contributor to the change in CEB. As DUM increases by one year CEB also increases by 0.6. An increase of total breast-feeding by one month would reduce CEB by about 0.16. Frequency of marriage (NTM, B= -0.09) and incidence of spousal separation (ISS, B= -0.073) are relegated to the second position. As frequency of marriage increases from 0 to 1 CEB decreases by 0.09, and as incidence of separation increase from 0 to 1, CEB dicreases by 0.073. Finally, monogamus union (FM1, B= -0.054) and economic and social value of children (TRCH2, B= -0.072) became least important in their contribution to the rate of change in CEB.

This multiple regression analysis shows that about 64% of the variation in CEB among the population studied remained unaccounted for by the proximate variables included in the model.

Regarding RCEB, the second dependant variable, those eight variables were found to have a very weak multiple correlation coefficient (^{R}RCEB.12345678= 0.25) though it is significant (^{f}(8/573, 0.005= 4.627/) (see Appendix 7 and 8). They accounted, altogether, for only 6.1% of the variation in number of children ever born in the last 5 years prior to the

survey date. Therefore, further discussion about this relationship seems not important.

6.3.2. Stepwise Multiple Regression Analysis

The stepwise multiple regression analysis was carried out so as to identify the relative contribution of independant variables when they are used incombination with other independant variable. The summary of the result is shown in Table 6.22.

Table 6.22

Summary of the stepwise Multiple Regression on CEB (DUM, DUB, TRcH2, ISS, NTM and FM1), N= 575

STEP No.	No. of Var. Entered	Multiple & Related Parameters: Multiple R	Multiple R^2	Changes in R^2	Standard error of Estimate	Variables entered	Values Final Step Coefficients: b	B	F-to Delete	Const-ant	Partial Correlation Coefficient
1	1	0.557	0.311	0.311	2.0029	DUM	0.1873	0.5927	301.548*		0.5865
2	2	0.581	0.337	0.026	1.9657	DBF	-0.0436	-0.1563	21.208*		-0.1886
3	3	0.585	0.343	0.0054	1.9596	TRCH2	-0.3343	-0.0721	4.624*	4.1191	-0.0893
4	4	0.590	0.348	0.005	1.9536	ISS	-0.4127	-0.0715	4.470*		-0.0878
5	5	0.594	0.353	0.005	1.9478	NTM	-0.4213	-0.0888	5.975*		-0.1014
6	6	0.595	0.355	0.002	1.9466	FMI	-0.3492	-0.0479	1.7 41*		-0.0549
---All variables Included in the Model		0.596	0.356	0.001	1.9485						

* P < 0.005

---Regression Equation

CEB= 4.1194+0.1873DUM+-0.0436DUF +- 0.3343TRCH2+-0.4127ISS+-
-0.4213NTM +-0.3492

Duration of marriage (DUM) was the first variable to enter into the regression model. About 31.1% of the variation in CEB was accounted for by DUM. Duration of breast-feeding (DBF) was included in the model in the second step. The proportion of explained variance, thus, increased by 2.6%. Types of reasons for having children (TRCH2) and incidence of

spousal separation (ISS) entered in the model in step three and four respectively. The increase in the proportion of variance accounted for in CEB attributable to TRCH2 and ISS was 0.54 and 0.5% respectively. The last variables entered in step five and six were frequency of marriage (NTM) and types of marital union (FM1) that raised the proportion of explaiend variance by 0.5 and 0.2% respectively. The remaining two variables, age at first marriage (AFM) and marital status (MR) were not included in the model becouse their contribution to the variance of CEB was not significant; it was only 0.1%. That is, if AFM and MR had entered into the model, the explained variance in CEB would have been raised from 35.5% to only 35%6%.

Like the multiple regression, the stepwise regression analysis also identified duration of marriage and duration of breast-feeding as the two most important contributor to the variation in CEB among the interviewed women. They accounted for 33.7% of the variance in CEB.

The stepwise regression of RCEB on the same 8 independant variables selected 7 of them (see Appendix 9). The variable that failled to enter into the model was duration of marriage. Except marital status, all variables entered are inversely associated with RCEB. That is, as might be expected RCEB was higher among currently married women than among widowed and divorced ones.

As the independant F ratio obtained for each variable suggest, among the included independant variables, reason for

having children (TRCH2) duration of breast-feeding (DBF) and number of times married (NTM) are found to be relatively more important than other variables. However, though significant, (^{f}(7/574,0.005= 5.173) the total variance accounted for by 7 variables included in the model is only 5.9%.

6.4. Socio-Economic Factors and Fertility

This section is devoted to the univariate, bivariate and multivariate analysis of the effect of socio-economic factors (education, religion, economic status, and child mortality) on fertility.

6.4.1. Education and Fertility

The data in Table 6.24 shows that MCEB was consistently higher among illiterate women in all cases (PAS, weredas and for the whole sample) than among women with primary level education. The exception was Yasya, but it might be due to the fact that there was only one woman with primary level education. The difference in MCEB between these two educational catagories was lowest in Chezaster (0.29), Agena (0.53) and Ayanda (0.57); medium in Emdibir (0.99) Aewan (1.46) and Zigbaboto (1.82) and highest in sise 0(2.78) and Shebraden (3.2). However, in both weredas and for the whole sample, the range in MCEB was almost equal, that is 1.25 in Cheha, 1.24 in Ezha-and-Wolene and 1.12 For the whole sample.

On the other hand, MRCEB did not show consistent pattern. It was higher among illitrate women than among women with primary level education only in 3 PAS one Wereda (Ezha-and -

Wolene and for the whole sample.

Comparison of Fertility among women below primary and above priary level education seems not possible because of the small number of cases in the latter one. Nevertheles, it can observed from the Table that MCEB increased beyoned primary level of education by 0.29 in Cheha, by one child in Ezha- and -Wolene and by 0.55 for the whole sample.

Table 6.23

MCEB and MRCEB by Education, PAS, Weredas and Total, Cheha, and Ezha-and-Wolene, 1993

Pas and	Illiterate		Grade 1-6		Grade 7 & above		Grade 1 & above	
Weredas	MCEB	MRCEB	MCEB	MRCEB	MCEB	MRCEB	MCEB	MRCEB
SISE & D.	5.78	1.31	3.00	1.67	2.25	1.75	2.57	1.71
AYANDA	4.57	1.54	4.00	1.67			4.00	1.67
AWANE	4.98	1.94	3.52	2.50			3.52	2.50
EMDIBIR	4.74	1.39	3.75	1.45	3.89	1.67	3.78	1.47
CHEHA WEREDA	4.91	1.49	3.66	1.54	3.95	1.68	3.76	1.59
YASYA	3.65	1.94	4.00*	3.00*				
CHEZA S.	4.29	2.01	4.00**	2.00**	5.00*	2.00*	4.50	2.00
ZIGBA B.	4.74	1.84	2.92	1.50	2.00*	2.00*	2.85	1.50
AGENA	5.20	1.68	4.67	1.33	7.00	3.33	5.83	2.33
WKIYE	3.73	1.15						
SHEBRA D.	4.82	1.87	1.80	1.40	2.00**	0.5	1.86	1.14
EZHA-AND WOLENE	4.24	2.06	3.00	1.55	4.00	1.88	3.27	1.63
TOTAL	4.54	1.82	3.42	1.52	3.97	1.79	3.60	1.61

Source: Own Survey
* Based on one woman
** Based on two women

In order to avoid the problem of limited number of observations, category 2 and 3 are lamped together (last column of Table 6.2.4. It can be observed that MCEB was substantially lower among women with formal educartion than among Illiterate ones in all PAS (except Cheza.S. and Agena), in both weredas and for the whole sample.

Therefore, it can be generally said that women's education is negatively related to number of children, though weak the correlation(-0.11, for the whole sample) is significant at 0.05 level. Thus ,this finding supports the previous studies which found an inverse association between women's education and fertility. (eg. Abdulahi, 1989; Kestern and Markos, 1981; Assefa, 1990 and Betemariam, 1992).

The effect of education on fertility may be affected by other variables like the proximate determinants. Therefore, inorder to minimize this effect it is imperative to control for these other variables. As presented in Table 6.24, controlling for the proximate variable. (marriage factors, duration of breast-feeding, indicator of value of children and a family planning variable) does not bring appriciable change in the relationship between educartion and fertility. That is, with in all of the different classes of the proximate variables, except among women who married for 11-20 yars and among women who breast-feed for more than 24 months, MCEB is higher among illiterate women than among women with primary level education. And the MCEB of women with above primary level education is higher than those with primary level except among women who said that economic help before old age and old age security is the primary reason for having children and among those who approved contraceptive use. But the MCEB of women with no formal education is higher than those with 7th grade and above education except among polygamous marriages, never separated women and women who married more than once and among women who married for more than 10 years.

Table 6.24

MCEB and MRCEB by Level of Education and Proximate variables, Cheha and Ezha-and-Wolene, 1993

Proximate Variables	No Formal Education	Grade 1-6	Grade 7th & above
	MCEB	MCEB	MCEB
Age at First Marriage			
< 17 years	4.94	4.00	4.67
17 - 19 years	4.39	3.44	3.64
> 20 years	3.55	1.90	2.50
Duration of Marriage			
1 - 10 years	2.18	1.88	2.33
11 - 20 years	4.78	5.23	6.00
> 20 years	6.24	4.60	6.50**
Frequency of Marriage			
Once	4.58	3.40	3.68
More than Once	4.52	3.57	6.00**
Incidence of Spousal Separation			
Never Separated	4.94	3.00	5.67
Ever Separated	4.53	3.50	3.63
Types of Marital Union			
Monogamy	4.52	3.47	3.59
Polygamy	4.94	4.00	6.00
Duration of Breast-feeding			
< 19 Months	5.39	4.57	5.00
19 - 24 Months	4.97	3.33	4.30
> 24 Months	4.84	5.57	
Most Important Reason for having Children.			
Love and Coninutiy of the family (clan name)	4.77	3.56	4.04
Economic Help & old age security	4.43	3.62	3.50
Marriage Stability & Social acceptance	4.41	2.14	2.67
Attitude Towards Family Planing			
Approved	5.22	4.00	3.89
Disapproved	4.37	3.13	3.75

Source: Own Survey
* Based on one woman
** Based on two women.

Since education is negatively associated (r= 0.21) with women's age) it may affect the eduction -fertility relationship. So to minimize this effect MCEB is classified by education and two broad age groups (Table 6.25)

Table 6-25

MCEB by Education and Two Broad Age Group of women, Cheha and ezha-and-Wolene, 1993

Age Groups	Illitreate	Grade 1 - 6	Grade 7 & Above
< 35 years	3.20	2.67	3.48
≥ 35 years	5.89	5.67	7.00

Source: Own Survey

However, controlling for age (though broad) has not brought about a significant change in the previous observation, especially concerning the first two categories. But above primary level fertility has increased.

6.4.2. Religion and Fertility.

It has been indicated in the literature that religion is one of social factor affecting fertility though the findings are not all unidirectional. In the present study, it was found (Table 6.26) that MCEB was higher among the Muslims in 6 PAS,

in one wereda (Cheha). In Ezha - and - Wolene, for the whole sample and in the remaining three PAS, however, MCEB was higher among Christians. The differences (though not substantial) varied from 0.25 in Shebraden & Zigbaboto to 0.52 in Ayanda in the former case and from 0.14 in Agena to 0.91 in Emdibir & 1.03 in Wkye in the latter case. MRCEB was also higher among Muslim in 5 PAS, one wereda (Ezha-and-Wolene) and for the whole sample.

The simple correlation cofficient revealed that proportion christian and MCEB are positively related (0.30) whereas percent Muslim and MCEB are negatively associated (-0.13). But none of these cofficients are significant at 0.05 level.

Table 6.26

MCEB and MRCEB by Religion, PAS, Weredas and Total, Cheha and Ezha-and-Wolene, 1993

Pas and Weredas	Muslim		Christean	
	MCEB	RCEB	MCEB	RCEB
SISE- & DENEB	5.61	1.39	5.11	1.42
AYANDA	4.86	1.64	4.34	1.49
AWANE	5.06	2.09	4.67	1.72
EMDIBIR	3.61	1.82	4.52	1.38
CHEHA WEREDA	4.87	1.41	4.56	1.39
YASYA	3.73	2.00	3.50	1.88
CHEZA SEFER	4.00*	2.00*	4.30	2.19
ZIGBA BOTO	4.65	1.64	4.40	1.81
AGENA	4.40	2.00	5.54	1.70
WKIYE	3.32	1.09	4.35	1.26
SHEBRA DEN	4.75	1.25	4.70	1.83
EZHA- AND - WOLENE	3.66	1.92	4.60	1.39
TOTAL	4.20	1.69	4.45	1.60

Source: Own Survey
**- Based on two women.

Controlling for the proximate variables (Table 6.27) have brought slight change in the religion-fertility-relationship. That is in most cases (12 out of 20) MCEB was higher among Christian than among Muslims. For instance, the differences in MCEB between Christian and Muslims were lowest among women who married for more than 20 years (0.14) and among women who

breastfeed for more than 19 months (0.16); it was highest among women who married at age between 17-19 years (0.74) and among those who disapproved the use of contraception (0.64). On the other hand, the difference betweem Muslims and Christians in MCEB was highest among women who were in polygamous union (0.87) and among women who married at age 19 and over (0.73) and lowest among women who considered stability of marriage and social acceptance as the most important reason for having children (0.11). Controlling for age also demonstrated that at both broad age groups MCEB was higher (though not sizeable) among christians (3.33) than among Muslims (2.28) at age below 35 years; at age 35 and older the difference was only 0.17.

Table 2.28
MCEB by Religion and Two Broad Age Groups of women, Cheha, and Wolene, 1993

Age Groups	Muslim	Christian
<35 years	2.77	3.33
>35 years	5.78	5.95

Source: Own Survey

Though the finding is not consistent when controlling for proximate variables was introduced, the fact that the difference in MCEB between the two religion remained substantial indicates that religion has its own independent effect on fertility.

6.4.3. Economic Status and fertility

Previous studies (as shown in the literature) in different parts of the world have demonstrated that socio-

Table 6.27
MCEB and MRCEB by Religion and Poroximate Variables, Cheha and Ezha-and-Wolene, 1993

Proximate Variables	Muslim	Christian
	MCEB	MCEB
Age at First Marriage		
< 17 years	4.54	4.99
17 - 19 years	3.75	4.49
> 20 years	3.78	3.05
Duration of Marriage		
1 - 10 years	1.65	2.44
11 - 20 years	4.70	4.93
> 20 years	6.11	6.25
Frequency of Marriage		
Once	4.19	4.54
More than Once	4.19	4.62
Incidence of Spousal Separation		
Never Separated	5.06	4.62
Ever Separated	4.12	4.55
Types of Marital Union		
Monogamy	4.07	4.52
Polygamy	5.73	4.86
Duration of Breast-feeding		
< 19 Months	5.14	5.30
19 - 24 Months	4.88	4.82
> 24 Months	4.62	4.99
Most Important Reason for having Children.		
Love and Coninutiy of the family (clan name)	4.15	4.79
Economic Help & old age security	4.34	4.34
Marriage Stability & Social acceptance	4.34	4.23
Attitude Towards Family Planing		
Approved	5.24	4.84
Disapproved	3.83	4.47

Source:Own Survey

economic status has a positive effect on fertility, in rural setting. Generally speaking, the finding from this study also seems to confirm the previous findings (Table 6.29).

It is evident from the table that MCEB was higher among high economic status household than among lower status ones in 7 PAS, in both weredas and for the whole sample. For instance, wealthier households in Yasya and Zigbaboto had, on average 1.02 and 1.89 more live births respectively than the poor households. In Cheha, Ezha-and-Wolene, for the whole sample, the differences in MCEB were 0.5. 0.91 and 1.33 respectively.

Table 6.29

MCEB and MRCEB by Economic Status, PAS, Wredas and Total, Cheha-and- Ezha-and-Wolene, 1993

Pas and	Low		High	
Weredas	MCEB	MRCEB	MCEB	MRCEB
SISE- & DENEB	5.03	1.45	5.71	1.21
AYANDA	4.63	1.66	4.37	1.32
AWANE	4.79	1.95	5.33	2.00
EMDIBIR	4.37	1.45	5.14	1.14
CHEHA WEREDA	4.56	1.52	5.06	1.42
YASYA	3.48	2.04	4.50	1.60
CHEZA SEFER	4.03	2.09	4.80	1.90
ZIGBA BOTO	3.64	1.57	5.53	2.10
AGENA	5.39	1.77	3.67	1.67
WKIYE	3.78	1.17	3.63	1.13
SHEBRA DEN	4.54	1.87	4.56	1.56
EZHA- AND - WOLENE	4.14	1.68	5.05	2.02
TOTAL	4.33	1.68	5.66	1.89

Source Own Survey

Since economic status is partly a positive function of age (r=0.12, for the whole sample), an attempt is made to minimize its effect by classifying MCEB by economic status and two broad age groups of women (Table 6.30).

Table 6.30

MCEB by Economic Status and Two Broad Age Group of Women, Cheha and Ezha-and-Wolene,1993

Age Group	Low	High
< 35 years	3.08	3.48
≥ 35 years	5.88	5.99

Source : Own Survey

It can be observed from the Table that though the differences declined, did not disappear after age has been controlled. The differences still persist even after the proximate variables were controlled for (Table 6.31). Wealthier households had larger (though not as large as before the introduction of the control) number of children everborn than the poor ones in almost all (16 out of 20) various classes of proximate determinants. This suggests that economic status has its own effect on fertility. This result, therefore has confirmed previous research findings in this area (eg. Abdulahi, 1989; (Alemayehu and Metu); Mackary, 1979(Ethiopia); Sarma, 1985/India/ and Stoeckel and Chowdhury, 1980 (Bangladesh).

Table 6.31

MCEB and MRCEB by Socio-Economic Status and proximate variables, Cheha and Wolene, 1993

Proximate Variables	Low	High
	MCEB	MCEB
Age at First Marriage		
< 17 years	4.74	5.26
7 - 19 years	4.22	4.47
> 20 years	3.94	3.27
Duration of Marriage		
1 - 10 years	2.10	2.59
11 - 20 years	4.87	4.82
> 20 years	6.25	6.07
Frequency of Marriage		
Once	4.32	4.77
More than Once	4.40	4.82
Incidence of Spousal Separation		
Never Separated	4.30	6.57
Ever Separated	4.35	4.61
Types of Marital Union		
Monogamy	4.27	4.74
Polygamy	4.90	5.33
Duration of Breast-feeding		
< 19 Months	5.27	5.19
19 - 24 Months	4.75	5.09
> 24 Months	4.85	4.93
Most Important Reason for having Children.		
Love and Coninutiy of the family (clan name)	4.50	4.87
Economic Help & old age security	4.23	4.68
Marriage Stability & Social acceptance	4.14	4.76
Attitude Towards Family Planing		
Approved	4.84	5.25
Disapproved	4.15	4.61

Source: Own Survey

6.4. Child Mortality and Fertility

One of the most consistent findings, as indicated in the literature, is the direct association between infant (Child mortality) and fertility, in a non-contracepting but widely breast-feeding population infant death is found to raise fertility through reducrtion of length of lactation and hence frequent preganancy (Chandran, 1989). In addition, due to fear of chiild mortality parents tend to bear large number of children to increase the number of surviores (Taylor,et,al,1976). The Negative association between child mortality and length of ful breast-feeding has been already noted in chapter 3.

It is presented in Table 6.32 that both MCEB and MRCEB increase with average number of children died(r= 0.25 and 0.50 respectively). Similarly, proportion of children died below age six is positively associated with both MCEB and MRCEB (r= 0.16 and 0.19 respectively),but none of these cofficient are significant at 0.05 level.

Table 6.32

Mean Nubmer of Childfen ever Born (MCEB), Mean Number of Children Ever Born in Recent Years (MRCEB) Average Number of Children Died (NMFD),and Proportion of Children Died at Age Below 6 (PCD) by PAS and Weredas,Cheha and Ezha & Wolene,1993.

PAS and Weredas	MCEB	RCEB	NMFD	PCD6
SISE- & DENEB	5.26	1.37	0.66	0.32
AYANDA	4.51	1.54	0.87	0.44
AWANE	4.92	1.96	0.86	0.39
EMDIBIR	4.45	1.34	0.25	0.17
CHEHA WEREDA	4.66	1.50	0.52	0.29
YASYA	3.71	1.86	0.72	0.27
CHEZA SEFER	4.33	1.91	0.65	0.31
ZIGBA BOTO	4.39	1.78	0.82	0.31
AGENA	5.38	1.77	0.68	0.22
WKIYE	3.81	1.15	0.50	0.34
SHEBRA DEN	4.56	1.77	0.74	0.40
EZHA- AND - WOLENE	4.32	1.68	0.58	0.33
TOTAL	4.46	1.61	0.62	0.31

Source: Own Survey

For the whole sample also number of children died at age below 6 is positively related to number of children everborn (r=0.49) and number of children ever born 5 years prior to the survey date, (r= 0.61). Both are statistically significant at 0.05 level.

In order to minimize the effect of age on the association between child mortality and fertility an attempt was made to cross-classify MCEB and MRCEB by two group child mortality and age categories (Table 6.33). It is evident from the Table that both in younger and older age group, fertility increases with child mortality. As the proportion of children died increased from below 13% to more than 13% MCEB increased from 4.24 to 6.21 (a difference of about 2 children) at age below 35 years and from 4.57 to 4.92 children at age above 35 years.

Table 6.33

MCEB and MRCEB by child Mortality (PCD and NCD6) and Two Broad Age Categories of Women Cheha and Ezha-and-Wolene, 1993.

Age Group	Child Mortality				
	PCD		NCD6		
	0<0.13	≥ 0.13	0	1 -2	>2
<35	4.26	6.21	3.86	5.68	5.97
	(1.39)	(1.49)	(1.31)	(2.28)	(4.29)
≥ 35	4.57	4.92	4.41	4.89	7.75
	(1.20)	(2.21)	(1.0)	(1.75)	(3.75)
Total	4.25	5.23	3.89	5.52	8.42
	(1.41)	(2.27)	(1.26)	(2.17)	(4.19)

Source: Own Survey

Note:- Figures in Parethesis are MRCEB.

MRCED also increased from 1.32 to 1.49 among younger women and from 1.2 to 2.21 (a range of about one child) among older women. For the whole sample, there was a range of about one child between these two child mortality classes.

In the same manner, both MCEB and MRCEB increased from 5.68 to 5.97 children ever born among younger women and from 4.89 to 7.75 children ever born among older women when as number of children died at age below 6 years increased from 1

upto over 2 children. MRCEB also increased from 2.28 to 4.29 and 1.75 to 3.75 among younger and older age group of women respectively.

Among all women interviewed, women who lost more than two children had on average, about 3 children ever born than, women who lost 1hildren aged below 6 years. The differnce in MRCEB between these group of women was about 2 children.

The same pattern of association was observed among PAS and in the two weredas. As presented in Table 6.34, in 6 PAS,the difference in MCEB between these two child mortality groups (PCD) was between 2 (in Sise-and-Deneb) to 2.91 in Zigbaboto.

Similarly, the range in MRCEB was between 1.17 (in Aewan) to 2.2 (Cheza Sefer) in 7 PAS. The difference was about one child between the two weredas.

It follows from this one of way relationship analysis (from child mortality to fertility) that child mortality is an important determinant of fertility in the study area.

Table 6.34

MCEB and MRCEB by Porportion of Children Died (PCD) by PAS, Weredas and Total, Cheha and Ezha and Wolene, 1993

PAS and Weredas	< 0.13 MCEB	< 0.13 RCEB	> 0.13 MCEB	> 0.13 RCEB
SISE- & DENEB	5.00	1.41	7.00	1.38
AYANDA	4,22	1.44	5.63	1.89
AWANE	4.53	1.75	6.92	2.92
EMDIBIR	4.70	1.38	4.36	2.18
CHEHA WEREDA	4.44	1.39	5.60	2.04
YASYA	3.34	1.63	5.28	2.83
CHEZA SEFER	4.38	1.65	5.00	3.07
ZIGBA BOTO	3.70	1.39	6.61	3.00
AGENA	5.11	1.63	7.71	3.00
WKIYE	3.48	0.98	6.08	2.31
SHEBRA DEN	4.31	1.53	6.44	3.00
EZHA- AND - WOLENE	4.08	1.41	5.23	2.27
TOTAL	4.25	1.41	5.23	2.27

Source: Own Survey

6.5. The Effect of Socio-Economic Factors on Fertility: a Multivariate Analysis

In the preceding section the discusion concentrated on a univariate and bivariate analysis of the relationship between socio-economic factors and fertility. Here the main interest is to analyse the combined and independant impact of socio-economic factors (education, religion, economic status and child mortality) on fertility (CEB and RCEB) using multiple and stepwise regression model.

6.5.1. Multiple Regression Analysis

As can be observed from Table 6.35 mulrtiple correlation $R^{CEB}.123456 = 0.545$ shows a significant ($^{r}(6/674, 0.005 = 47.381)$ and linear combination of the six independant variables. Coefficient of multiple determination (R^2) reveals that about 29.7% of the variation in CEB is attributed to the interplay of these six socio-economic variables. The adjusted R^2 is 29%.

The largest proportion of the variance in CEB is due to child mortality (NCD6) and economic status indicator, area of dwelling unit (s) (ADU). Number of children died at age below six years with a partial correlation cofficient of $^{r}CEB2.13456 = 0.49$, accounted for about 24% of the variation in CEB among the women interviewed. It is significant at less than 0.005 level.

Table 6.35

ANOVA Table of Regression Model For Number of Children Ever-born (CEB) (Six Explanatory Variables): Cheha and Ezha-and-Wolene,1993

Source of Varation	Degree of Freedom	Sum of Squares	Variance.	F-Ratio
Model (Regression	6	1410.731	235.122	47.381*
Residual	674	3344.611	4.962	
Total	680	4755.342		

Source: Own Survey P< 0.005

Table 6.36

Summary of Multiple Regression on CEB (LFE, NCD6, REL, ESS, ADU, and TLU)

variables	Regression Coefficient (bi)	Beta Coefficient (B)	F	Partial Correlation
LFE (1)	-0.4214	-0.0770	5.280*	-0.0882
NCD6(2)	1.2260	0.4789	213.023*	0.4901
REL (3)	0.5428	0.0955	8.434*	0.1112
ESS (4)	-0.2833	-0.0450	1.443	-0.2350
ADU (5)	0.0850	0.2183	39.397*	0.0370
TLU (6)	0.0456	0.0347	0.925	0.0370

Source: Own Survey * P< 0.005

Unadjusted ^{R}CEB.123456=0.545

Unadjusted R^2= 29.7%

Adjusted R^2= 29%

Regression Equation

CEB = 1.9401+-0.4214LFE+1.2260NCD6+0.5428REL+-0.2833ESS+0.0850ADU+0.0456TLU

Area of dewelling unit(s) with a partial correlation cofficient of ⌜CEB5.123456= 0.235, accounted for 5.5% of the varian in CEB. among women interviewed. It is significant at less than 0.005 level.

All of the explaniatory variables are associated with CEB in the expected direction but economic status scale (ESS) which has a negative cofficient Nevertheless, it is not

significant at 0.05 level. Except education (LFE) all other variables (child mortality (NCD6) Christianity (REL) and Economic Status indicators (area of dwelling unit (ADU) and tropical livestock unit (TLU)) are positively associated with CEB. Thus; generally the mutivariate analysis confirmed the bivariate analysis.

The rate of change in CEB produced by child mortality (NCD6) and economic status indicator (ADU) is comparatively highest, (beta cofficients (B) for NCD6 and ADU are 0.4789 and 0.2183 respectively). That means as the number of children died at age below 6 increases by one CEB also increases by about 0.5. On the other hand, an increase of women's education from zero to primary level is associated with a decline of CEB by 0.08.

The multiple regression analysis demonstrates that about 70 percent of the variation in number of children everborn among the women interviewed is not explained by the socio-economic variables considered by the model.

However, with the second dependant variable (RCEB) the same six socio-economic variables (Table 6.37 and 6.38) are found to have a significant ($^{F}(6/674,0.005= 76.965)$) and strong multiple association ($^{R}RCEB.123456=0.638$). The proportion of variance in RCEB accounted for by these variables is more than 40%.

Table 6.37

ANOVA Table of Regression Model For Number of Children Ever-Born in the Last Five Years Preceding the Survey (RCEB) (Six Explanatory variables: Cheha and Ezha-and-Wolene, 1993

Source of Variation	Degree of Freedom	Sum of Squares	Variance	F-Ratio
Model (Regression)	6	460.643	76.774	
Residual	674	672.326	0.998	76.965*
Total	680	1132.969		

Source: Own Survey * P<0.005

Table 6.38

Summary of Multiple Regression on RCEB (LFE, NOD6, REL, ESS, ADU and TLU)

Variables	Regression Cofficient(bi)	Beta Coefficient(B)	F	Partial Correlation Coefficient
LFE (1)	0.2535	0.0949	9.756*	0.1194
NCD6 (2)	0.7963	0.6372	446.803*	0.6314
REL (3)	0.0492	0.0785	6.892*	0.1006
ESS (4)	-0.0888	-0.0289	0.705	-0.0323
ADU (5)	-0.0078	-0.0410	1.632	-0.0491
TLU (6)	0.0156	0.0244	0.543	0.0284

Source: Own Survey * P < 0.005

Unadjusted ^{R}RCEB.123456 = 0.6376

Unadjusted R^2= 40.66

Adjusted R^2= 40. 13

Regression Equation

RCEB= 1.1053+0.2533LFE+0.7963NCD6+0.0492+-0.0888ESS+-0.0078 ADU+0.0156 TLU

The largest proportion of the variance in RCEB is attributable to child mortality (NCD6) and women's education (LFE). NCD6 that has a partial correlation cofficient of ^{r}RCEB2.13456 =0.6314 accounted for about 39.9% of the variation in RCEB among the study population (significant at 0.005 level).

Two of the economic status variables (ESS-composite scale and ADU-area of dwelling unit (s)) are inversely related to RCEB whereas, tropical livestock unit (TLU) has positive effects. However, none of the cofficients of these vriables are significant at 0.05 level. The remaining three variables have significant (at 0.005 level) positive cofficients. Womean's education which was negatively related to CEB is now directly associated with RCEB. As woman's education increase from no schooling to primary level, RCEB tends to rise by 0.095 (i.e, beta coeffecient.

6.5.2. Stepwise Multiple RegressionAnalysis

The summary of the stepwise multiple regression of CEB on the six socio-economic factors is presented in Table 6.39. Among six socio-economic variables, four of them were selected by the stepwise regression model.

The first variable that entered into the model (NCD6-Child mortality) accounted for 24.2% of the variation in CEB. The inclusion of economic status indicator (ADU-area of dwelling unit) in the second step raised the proportion of explained variance by 4%. Religion (REL) and women's educational attainment (LFE) entered in the model in step three and four and the percentage variation in CEB due to these variable increased by 0.7 and 0.5% respectively. The other two variables (ESS and TLU) did not make significant contribution to the variance in CEB and hence the model rejected them. Nevertheless, if they had entered into the model, the variance accounted for would have been enhanced by 0.2%.

It follows from the multiple and step wise regression analysis that child mortality and economic status are the two most important fertility differentials among the study population.

Table 6.39

Summary of the Stepwise Multiple Regression on CEB (NCD6, ADU, REL and LFE) N= 676

S T E P No.	No. of Var. & Related Parameters Entered	Multiple Correlation R	Multiple R^2	Changes in R^2	Standard error of Estimate	Variables entered	Values Coefficients b	Values Coefficients B	Final Step F-to Delete	Final Step Const-ant	Partial Correlation Coefficient
1	1	0.492	0.242	0.242	2.3034	NCD6	1.2327	0.4815	218.089*		0.4939*
2	2	0.532	0.283	0.040	2.2431	ADU	0.0816	0.2095	41.760*	2.023	0.2412*
3	3	0.538	0.289	0.007	2.2342	REL	0.5409	0.5409	8.403**		0.1108*
4	4	0.543	0.295	0.005	2.2272	LFE	-0.4142	-0.0757	5.220*		-0.0875*
All var. Included in the Model		0.545	0.297	0.002	2.2276						

* P < 0.005 P< 0.005

Regression Equation
CEB= 2.023 + 1.233NCD6+0.0816ADU+0.5409REL+-0.4142LFE

These variables are also among the three most significant contributors identified by the stepwise regression of RCEB on the six socio-economic factors(see Table 3.40). Child mortality (NCD6) was selected first and thus accounted for 38.8% of the variation in RCEB among the study population. Education (LFE) and area of dwelling unit (ADU) were included in the model in the second and third step and increased the proportion of explaind variance in RCEB by 0.8 and 0.3% respectively. The total variance accounted for by these three factors jointly was 40% and significant ($^{F}(3/677,0.005=150.246)$.

A separate multiple and step wise regeression of CEB and RCEB on proximate as well as socio-economic factors demonstrated that duration of marriage, frequency of marriage, breast-feeding and reasons for having children, child mortality economic status, education and religion as the most important ones affecting the variation of fertility among the

study population. However, the proportion of variance in fertility accounted for by these two sets of factors taken one group at a time was not more than 40%.

Table 6.40

Summary of the Stepwise Multiple Regression on RCEB (NCD6, LFE and ADU) N= 677

S T E P No.	No. of Var. & Related Entered	Multiple Correlation Parameters Multiple R	Multiple R^2	Changes in R^2	Standard error of Estimate	Variables entered	Values Final Step Coefficients b	B	F-to Delete	Const-ant	Partial Correlation Coefficient
1	1	0.623	0.388	0.388	1.0103	NCD6	0.7960	0.0376	449.146*		0.6315
2	2	0.630	0.397	0.008	1.0041	LFE	0.2551	0.0804	10.070*	1.375	0.1211
3	3	0.632	0.400	0.003	1.0023	ADU	-0.0105	0.0057	3.409**		-0.0708
All var. Included in the Model		0.6376	0.4066	0.07	0.9988						

* P < 0.005
** P < 0.05

Regression Equation
RCEB= 1.375 + 0.7960 NCD6+0.2551LFE+-0.0105ADU

Comparing the two sets of independant variable it is evident from the analysis that proximate factors explain the variation in CEB better than the socio-economic factors do. This is not uncommon in a population where natural fertility previals. On the other hand, socio-economic factors are more important than the proximate determinants in their contribution to variance in RCEB.

In order to make the comparisson more meaningful and to envestigate the combined effect on fertility, proximate and socio-economic factrors were mixed and a stepwise multiple regression was run (Table 6.41).

Out of 14 variables, 9 (5 proximat and 4 socio-economic) were selected by the stepwise regression model. Duration of marriage (DUM) was the first variable to enter into the model. It accounted for 40.4% of the variance in CEB. The inclusion

of child mortality (NCD6) duration of breast-feeding (DBF) education (LFE) and area of dwelling unit (ADU) in the following four steps improved the proportion of varianceaccounted for in CEB by 9.3, 7.7, 1.7 and 0.9% respectively. The other four variables that entered into the model in the last four steps raised, altogether, the variation of CEB by 0.8%. The remaing 5 variables (age at first

Table 6.41

Summary of the Stepwise Multiple Regresssion on (DUM, NCD6,DBF, LFE, ADU; REL,NTM, FM1 and MR) N= 671

STEP No.	No. of Var. Entered	Multiple Correlation & Related Parameters: Multiple R	Multiple R^2	Changes in R^2	Standard error of Estimate	Variables entered	Values Final Step: Coefficients b	Coefficients B	F-to Delete	Const-ant	Partial Correlation Coefficient
1	1	0.635	0.404	0.404	2.0438	DUM	0.1453	0.4606	290.474*		0.5496
2	2	0.705	0.497	0.093	1.8786	NCD6	0.8792	0.3434	175.298*		0.4551
3	3	0.758	0.574	0.077	1.7301	DBF	-0.3703	-0.2603	107.269*		-0.3713
4	4	0.769	0.591	0.017	1.6960	LFE	-0.5919	-0.1133	17.988*		-0.1616
5	5	0.775	0.600	0.009	1.6779	ADU	0.0378	0.0970	15.327*	3.0313	0.1494
6	6	0.777	0.603	0.003	1.6729	REL	0.2806	0.0494	3.910*		0.0761
7	7	0.779	0.607	0.003	1.6672	NTM	-0.4047	-0.0761	8.185*		-0.1098
8	8	0.780	0.608	0.001	1.6656	FM1	-0.3363	-0.0412	2.450*		-0.0603
9	9	0.780	0.609	0.001	1.6645	MR	0.0245	0.0379	1.875*		0.0528
All var. Included in the Model		0.780	0.612	0.003	1.6653						

* P < 0.005
** P < 0.05

Regression equation

CEB=3.031+0.145DUM+0.879NCD6+-0.370DBF+-0.592LFE+0.038 ADU+0.281REL+-0.405NTM +-0.336FM1+0.025MR

marriage (AFM), incidence of spousal separation (ISS), tropical livestock unit (TLU) and composite index of economic status (ESS)) were not included in the model because they made insignificant contrigbution (only 0.3%) to the variance in CEB.

On the whole, it is evident from the table (6.41) that the 9 variables included in the model with a significant ($^{F}(9/671,0.005=116.2)$) multiple correlation cofficient (^{R}CEB.123456789 =0.78) accounted for 60.9% of the variation in

the number of children everborn among ever married women in Cheha and Ezha-and-Wolene Weredas.

Moreover, the analysis confirmed the previous result that proximate determinants (such ass DUM and DBF) are more important than socio-economic factors (like ND6 and LFE) in explaining the variance in CEB.

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In order to disintangle the relative contribution of those 14 combined socio-economic and proximate factors to the variation in recent fertility (RCEB), a similar stepwise regression was run. The summary of the result is shown in Table 6.42.

Among 14 variables 11 (eight proximate and 3 socio-economic) were included in the model.

The proportion of variance in RCEB attributable to the variable (child mortality, NCD6) that entered into the model in the first step is 38.8%. The variabvles that were included in the model in step three and four are duration of breast-feeding (DBF) and duration of marriage (DUM) respectively. The

increase, in the proportion of variance accounted for in RCEB due to these variables was 3.7 and 4.8% respectively. The other eight factors which entered into the model jfrom step four upto eleven contributed between 0.1 and 0.9% to the expalined variance in RCEB.

Table 6.42

Summary of the Stepwise Multiple Regression on RCEB

(NCD6, DBFDUMMR,NTM,FM1,TRCH2,ISS,ADU,LFE, and AFM) N= 669

STEP No.	No. of Var. Entered	Multiple Correlation & Related Parameters Multiple R	Multiple R^2	Changes in R^2	Standard error of Estimate	Variables entered	Values Coefficients b	Final Step F-to Delete B	Const-ant	Partial Correlation Coefficient
1	1	0.623	0.388	0.388	1.0103	NCD6	0.8641	0.6915	568.23*	0.677
2	2	0.652	0.426	0.037	0.9797	DBF	-0.1592	-0.2293	64.92*	-0.297
3	3	0.688	0.474	0.048	0.9384	DUM	-0.0293	-0.1903	35.36*	-0.224
4	4	0.695	0.482	0.009	0.9314	MR	0.3392	0.0735	6.54*	0.098
5	5	0.699	0.489	0.006	0.9264	NTM	-0.2957	-0.1139	14.41*	3.038-0.145
6	6	0.703	0.494	0.006	0.9220	FMI	-0.3079	-0.0772	6.44*	-0.098
7	7	0.706	0.498	0.004	0.9194	TRCH2	-0.0934	-0.0573	4.27*	-0.079
8	8	0.707	0.500	0.002	0.9180	ISS	-0.0802	-0.0537	3.75*	-0.075
9	9	0.709	0.503	0.002	0.9164	ADU	-0.0096	-0.0503	3.19*	-0.069
10	10	0.710	0.505	0.002	0.9152	LFE	0.1293	0.0484	2.89*	0.066
11	11	0.711	0.506	0.001	0.9146	AFM	-0.0112	-0.0910	1.93**	-0.054
All variab. Included in the Model		0.712	0.507	0.001	0.9138				* P < 0.005 ** p< 0.05	

Regression Equation

RCEB=3.038+0.865NCD6+-0.159DBF+-0.029DUM+0.339MR+-0.296NTM+-0.308FM1+-0.093 TRCH2 +- 0.080ISS+-0.010ADU+0.129LFE+-0.09112AFM

Incombination these eleven variables with a significant (^{F}(11/669,0.005= 62.32) coefficient of multiple correlation (^{R}RCEB.1234567891011=0.71) accounted for 50.6% of the variation in number of children everborn in the last five years prior to the survey date in Cheha and Ezha-and-Wolene weredas. The remaing three variables (religion (REL), tropical livestock unit (TLU) ane economic status scale (ESS) are not

considered by the model because if they were icluded their contribution would have been only 0.1% which is not significant.

Consistent with the previous observation when CEB and RCEB were regressed on proximate and socio-economic factors separately, this final analysis also identified child mortality (NCD6), Duration of marriage (DUM) and duration of breast-feeding as the most significant proximate and socio-economic factors affecting the variation of fertility among the poulation of evermarried women in the two weredas considered. Similar to the previous result, the analysis suggest that proximate factors (DUM) and the socio-economic factor (NCD6) are most related to CEB and RCEB respectively.

CHAPTER SEVEN

SUMMARY AND RECOMMENDATIONS

7.1 Summary

The major objective of the study was to investigate the interconnections between socio-economic factors, proximate determinants and fertility among ever married Gurage women in the reproductive age group (15-49 years) in two rural areas of Western Gurage Region (Cheha and Ezha-and- Wolene Weredas).

Since most of the data required for the study was not available to the researcher, a sample survey of 681 ever married women and 160 currently married men were selected from 10 out of 117 peasant associations found in the two weredas.

After a pilot survey in July 1992 the main data was collected between December 14, 1992 and January 28, 1993 by 12 trained females and the researcher.

An attempt was made to evaluate the accuracy of age data by frequency graph and Mayer's blended index for digit preferences. It has been found that terminal digits 0,5 and 8 were the most preferred ones, reported by 15.9, 21.5 and 11.7% of women. However, compared to age reporting in the 1984 census for rural Shewa, the data from the survey is fairly accurate.

Regarding fertility data, distribution of mean number of children ever-born, the sex ratio of children ever-born and

proportion of children died by five years age group of women revealed no serious misreporting of live births. Thus, the reported data was used for all analyses required.

Bivariate (simple correlation) analysis was employed to identify the direction and degree of association between any independent and the dependant variable. Besides, a multivariate (multiple and step wise regression) was used for determining the combined and independent contribution of several explanatory variables to the variation in the dependant variable (fertility). Moreover, inorder to describe the spatial variation in the socio-economic characteristics of women interviewed, Chi-square statistics was utilized. Cross-classification of fertility by proximate and socio-economic factors also enabled to point out whether the observed relationship between a variable of interest and fertility is due to another associated factor.

Bivariate analysis showed that proximate determinants varied among PAS and between weredas according to the socio-economic characteristics of the population.

Generally, it was found that women's education was directly related to age at first marriage, incidence of spousal separation, frequency of marriage and polygyny, all of which except the latter one, were inversely associated with fertility. There were, relatively, large proportion of women with formal education in Sise-and-Deneb (16%) Emdibir (24%) Zigbaboto (18%) and Agena (13%). The corresponding figures for women in Cheha and Ezha-and-Wolene weredas. were 21 and 8%,

respectively. Thus, women in Cheha were better educated than women in Ezha-and-Wolene Wereda.

There were more Muslims (51%) in Cheha than in Ezha-and-Wolene Woreda (29%). As indicated by the correlation coefficients, Muslims married for the first time earlier than the Christians because they were less educated than the latter. It was observed that Christianity was negatively related to proportion currently married, but positively associated with incidence of spousal separation and frequency of marriage, whereas among Muslims the reverse was true.

Economic Status was found to be inversely but very weakly associated with mean age at first marriage. Marriage appeared to be more stable among high economic status group; but there was an indication that incidence of spousal separation was higher among wealthier households. Moreover, there was a positive correlation between economic status and incidence of polygamy.

Duration of breast-feeding and postpartum sexual abstinence varied spatially due to women's socio-economic background. Better educated women were found to feed breast, without supplementary food, longer than the illiterates. But mean duration of total breast-feeding and postpartum sexual abstinence was longer in PAS with larger proportion of women with no formal education. Thus, education was found to reduce duration of partial breast-feeding and sexual abstinence during lactation. But question on abstinence was indirect.

Contrary to the implicit expectation, partial breast-feeding and postpartum sexual abstinence were directly related

to economic status of the house hold. However, length of full-breast-feeding and number of milking cows (an economic status indicator) were inversely related.

It was also observed that mean duration of full-breast-feeding was shorter among PAS with higher child mortality.

Knowledge, attitude and practice of contraception varied significantly among PAS and between weredas due to the variation in the socio-economic characteristics of respondent and accessibility to family planning services.

For both sexes knowledge of contraception was much higher in Cheha (63% of women and 70% of men) than in Ezha-and-Wolene Wereda (31% of women and 37% of men); it was higher among men than among women in all PAS. Although about 45% of women and 54% of men had the knowledge of at least one method of contraception. only 26% of women and 18% of men approved it practice. However, compared to the very low level of contraceptive use (1.5%) the proportion who approved the practice and who intended to use it in the future (14% of both sex) seems to be very high. Husband-wife communication about contraception was extremely low; and men appeared to be a little bit resistant to the use of contraception. The major reasons for lack of interest (for both sexes) to use contraception in the future were the need to have as many children as possible and the belief that fertility is beyond human's control (it's God's business).

Considerable number of women (124.) had the knowledge of fertility limiting effect of prolonged breast-feeding. Among these women above 19% of them reported that they had purposely

breast-fed their children for several months in order to achieve desired spacing between births.

Formal Schooling and Christianity were found to be directly related to the knowledge, approval and intention of using contraception in the future. PAS with large proportion of women with formal education and Christians had generaly large proportion of women who had the knowledge and favorable attitude towards its practice. It has also been observed that disapproval of contraceptive practice and lack of interest to use it in the future were directly and significantly associated with child mortality.

The relationship between economic status and family planning variables was not, however consistent. The correlation coefficients (though insignificant at 0.05 level) indicated that economic status appeared to increase approval of the use of contraception. But it tended to reduce the intention to use it in the future.

In the study area, children of both sex start to participate in monotonous household chores from an early age (averages for female 5 years and for males 6 years) and thus enable adults to perform more productive work. As children grow old (average for male 15 years and female 12 years) they begin to engage in more useful labour like weeding, harvesting (up-rooting, scarping and decorticating Enset), handycraft, petty trade and others. As a result, it was found that 82% of mothers (excluding those women whose children were too young) received some kind of support (labour/ money/ gift) from their children. A considerable proportion (70 and 60%) of women said

that they obtained money and/or gift from single and married children respectively.

Almost all respondents, regardless of their demographic and socio-economic background, expected any kind of support from their children. About 86% of women and 77% men had high expectation that their children will support them when they get old. The sex difference in the degree of expectation of old age security from children reflects the greater economic dependance of female.

Regarding parents perception of di/advantage of having many children, 11% of women and about 17% of men considered that large family is not advantageous. Hence, it appears that women were a little bit more favorable to large family than among men. However, subject's response to 20 items on advantage and disadvantage of having many children did not give clear picture; it seems that respondents were equally favorable to both advantage and disadvantage of having children. Nevertheless, since about one third of the subject interviewed regarded large family as having both advantage and disadvantage, this result implies that most of the respondent recognized that large family is not without cost.

The survey data revealed that the two most important reasons for having children among both sexes were, in decreasing order, continuity of the family/clan name and old age security whereas stability of marriage and social acceptance were considered as least significant. Thus, unlike rural societies in five south east Asia countries included in value of children study (Arnold, et al.,1975) among the

population under investigation, the primary purpose of reproduction seems to be perpetuation of the family and the clan name.

As evaluated by more than three fourth of respondents, nowadays, the major cost of the child rearing is on food followed by education. Cost of education and clothing is shared among numbers of the extended family.

Concerning parents perception on the balance of cost and return on children, though only 9% of women replied that they received more than they spent and 17% said that they obtained about the same as they spent on children, more than 40% of male and female respondent reported that children who do not go to school produced or earned enough to compensate the cost on them at age between 7 and 15 years. Since schools operate in shift system, even students can contribute labour to the household.

It may, thus, fairly be deduced from the discussion on perceived economic and old age security value of children that in the study area children are more of economic assets than liabilities to their parents. This is mainly because the major economic cost is on food that is obtained largely from the farm and others are shared among relatives; opportunity cost of mothers time is almost zero, children's entry age to labour force is early and many of Gurage children are willing to help their parents.

It has been demonstrated that current economic contribution and perceived old age security value of children to parents varied according to the socio-economic

characteristics of the respondent.

In PAS (Sise-and-Deneb, Agena and Emidibir) where there were large proportion of women with formal education, labour contribution of children to farming was the lowest. In addition, accessibility to Junior and Senior Secondary High Schools might have reduced children's labour contribution to farming. Therefore, it appears that women's and children's education influenced the current economic value of children.

The simple correlation analysis revealed that there was a significant, direct and strong association between percentage of women in wealthier households and proportion who received money and or gift from children living at home or elsewhere. This suggests that economic status is strongly affected by the contribution of children. Moreover, consistent with the finding by value of children study (Arnold, et al., 1975) expected dependency on children in the old age was found to be lower among wealthier and better educated women. However, it is not clear the reason why wealthy women who received more economic help from children than poorer ones inclined not to rely on children for old age security.

Furthermore, PAS with high proportion of Muslims, illiterates and wealthier households were associated with large percentage of women who consider large family as advantageous. The positive relationship between economic status and perceived advantage of large family seems to confirm the positive correlation between children's

contribution and economic status of the household.

It has been also revealed that among christians and better educated women the primary motive for having children was love of children and continuity of the family or clan name. On the other hand, economic and social reasons were salient among muslims, illiterates and poorer households whereas, for wealthier ones social reason ranked first.

As regards economic cost of child rearing, PAS with large proportion of women with formal schooling tended to rate cost on education as significant one.

Proximate Factors and Fertility

The survey data revealed that the there was a spatial variation in fertility among the PAS in Cheha and Ezha-and Wolene Weredas. The difference in MCEB between Weredas (0.34) was much lower than that was observed among PAS (1.77). It was found that women in Cheha had on average 0.4 more living children than women in Ezha-and-Wolene Wereda. Among PAS,

it varied from 2.95 in Yasya to 4.72 in Agena. As a result, women in Ezha-and-Wolene wanted, on average, 0.74 more additional children than women in Cheha, whereas, among PAS the range was greater (i.e., 2.83 children). Thus, the average desired family size was higher in Ezha-and Wolene (8.36 children) than that was in Cheha (7.4 children). Within PAS, it varied from 7.1 children in Emdibir to 9.8 children in Wkiye. For the whole sample, average desired family size was found to be higher among men (10.4) than among women (about 8).

The bivariate analysis indicated that generally the variation of fertility among PAS was attributable to the variation in the proximate determinants.- marriage factors, breast-feeding and postpartum abstinence. In addition, it was found out that perceived di/advantage of having many children, reasons for having children and old age security value of children and family planning variables are strongly related to fertility.

Except in two PAS (Emdibir and Zigbaboto) MCEB was higher among widowed and divorced than among currently married women. It was higher among the former by 0.93 children in Cheha, by 2.7 children in Ezha-and-Wolene and by 1.81 children for the whole sample.

In all PAS, in both weredas and for the whole sample, MCEB was found to monotonically decline as age at first marriage increase from below 16 to 20 years or more. The difference in MCEB between the oldest and the youngest age-at-first-marriage groups was 1.68 for the whole sample, 1.32 in Ezha-and-Wolene and 2.17 in Cheha. The greatest range

within PAS (4.62 Children ever-born) was observed in Aewan.

As hypothesized, duration of marriage was found to directly and strongly related to number of children ever-born. Women who married for 20 or more years had about four or more live births than those who married for less than ten years. With in PAS, the range was between 4 to 5 children ever-born.

As expected frequency of marriage and incidence of spousal separation were found to reduce fertility. However, the effect of the former was inconsistent and not substantial. On the other hand, MRCEB was found consistently lower among more-than-once- married women than among those who married only once in 7 PAs, in both weredas and for the whole sample. Both MCEB and MRCEB were higher among women who had never been separated from their husband than among those who had ever been separated from their husband for 5 consecitive months in the last 5 years preceding the survey date.

Contrary to the expectation, Polygamy was found to raise fertility. In 6 PAS, both weredas and for the whole sample, polygamous unions had higher MCEB than monogamous marriages. Therefore, the finding supports the inconsistent relationship between types of marriage and fertility.

Duration of breast-feeding, postpartum amenorrhoea and postpartum sexual abstinence were all found to be inversely related, with varying degree, to fertility. MCEB and MRCEB were declining with increasing duration of breast-feeding in six PAS, one wereda (Ezha-and-Wolene) and for the whole

sample. In the remaining 4 PAS and Cheha the relationship was curvilinear; both indices of fertility were declining as breast-feeding was increasing from less than 19 to 19-24 months; but beyond two years fertility increased. Average duration of amenorrhoea was directly and strongly related to mean duration of breast-feeding. Nonetheless, the relationship between MCEB and duration of amenorrhoea was not consistent in all PAS, perhaps due to the very broad classification or misreporting of the retrospective data. Moreover, although differences were not substantial in some cases, both MCEB and MRCEB were found to decline with increasing duration of postpartum sexual abstinence in six PAS in both Weredas and for the whole sample.

As far as the association between value of children variable and fertility is concerned, it was found that MCEB was highest among women who want children primarily for love and the benefit of the family and the clan; and lowest among women whose desire for children was mainly for stabilizing marriage and for social acceptance. Fertility of women who considered help before old age and pension value of children as the most important motive for having children fall in between these two extremes. This pattern of relationship was not changed even after the socio-economic backgrounds of women were controlled for. Therefore, the hypothesis that number of children ever born is higher among women who desire children mainly for economic or social reason is not accepted.

Furthermore, women who perceived that having as many children as possible is advantageous had lower MCEB but

larger additional number of children desired. Likewise, women who expected heavy reliance on children in the old age had greater number of additional children wanted.

The relationship between attitude towards the use of contraception and fertility was such that generally PAS with large proportion of women who had a few number of children and greater demand for additional umber of children were found to have large proportion of women who disapproved the practice of contraception and to have no interest to use it in the future. It follows from the bivariate analysis of the relationship between proximate variables and fertility that duration of marriage, as expected, was found to raise fertility; whereas, contrary to the hypothesis, fertility was found to be higher among widowed women, polygamous marriages and among women who considered love of children and continuity of the family name as the primary motive for having children. On the other hand, as hypothesized fertility was inversely associated with age at first marriage, duration of breast-feeding- incidence of spousal separation, frequency of marriage.

Multivariate analysis revealed that 8 proximate variables (presented in table 6.21) accounted for about 35% of the variation in number of children ever-born among the study population. All the independent variables were related to CEB in the expected directions except age at first marriage (AFM) with a positive coefficient, but is not significant at 0.05 level. In addition, the same analysis revealed, contrary to the expectation, that CEB was lower among women who considered economic and social reasons are

the most important reason for having children (as indicated by negative coefficient for TRCH2). Moreover, whereas in the bivariate analysis it was found that MCEB was higher among widowed/ divorced women than among currently married ones, in the multivariate analysis the reverse was true. But it was not significant at 0.05 level.

Regarding the second dependant variable (RCEB), those 8 independent variables were found to have a very week (though significant at 0.005 level) multiple correlation (R= 0.25) that accounted for only 6.1% of the variation in RCEB.

The stepwise multiple regression identified duration of marriage and duration of breast-feeding as the first two major contributor (33.7%) to the variation in CEB among women interviewed. Age at first marriage and current marital status were rejected by the model due to their insignificant contribution.

Socio-Economic Factors and Fertility

Both bivariate and multivariate analysis have shown that women's socio-economic characteristics (education, religion, economic status and child mortality) are related to fertility in the study area.

It was found that MCEB was consistently higher among women with no formal education than among women with primary education in all PAS (except in Yasya) in both weredas and for the whole sample. MCEB of women with formal education was also consistently lower than that of women without formal schooling in both wereds and for the whole sample. Even after the effect of age was minimized, the general inverse association between women's education and fertility was

retained.

As regards religion, the bivariate analysis indicated that there was weak and insignificant positive association between Christianity and number of children ever born at both PA level and for the whole sample. When the effect of age was broadly controlled, still fertility was higher among Christians than among Muslims. But it was not substantial.

Economic status was found to be directly related to fertility. MCEB was higher among wealthier households than among poorer ones in 7 PAS, in both weredas and for the whole sample. In Cheha, Ezha-and-Wolene and for the whole sample the differences in MCEB were 0.5, 0.91 and 1.33 respectively. However, MRCEB was higher among low economic status group in most PAS, but not in Ezha-and-Wolene and for the whole sample. Even after the effect of age was minimized, though differences declined, still wealthier women had higher fertility.

At both PA level and for the whole sample; index of child mortality was positively related to fertility. Among all women interviewed women who lost more than two children had on average 3 more children ever-born than women who lost a child aged below 6 years. It was found also that as the proportion of children died increased from below 13% to more than 13% MCEB increased from 4.26 to 6.21 at age under 35 year. and from 4.57 to 4.92 at age above 35 years.

Multivariate analysis has shown that 6 socio-economic variables considered accounted for 29% (adjusted R^2) of the variation in number of children ever born among the study population. It is significant at less than 0.005 level.The

same 6 socio-economic factors were found to be more strongly associated to recent CEB than to number of children ever born because the proportion of variance in RCEB accounted for by these variables was higher by more than 10% (i.e., 40.13% - adjusted R^2).

The stepwise multiple regression analysis has identified out of 6, four socio-economic factors (child mortality, area of dwelling unit, religion and education) as the major contributors to the variation in CEB. Child mortality (NCD6) and economic status indicator (area of dwelling Unit-ADU) that entered in to the model in the first and second steps respectively accounted for 28.3% of the variation in CEB among the study population. Two variables (economic status scale ESS and tropical livestock unit-TLU did not enter into the model due to their insignificant contribution.

It follows from multiple and stepwise regression analysis that child mortality (NCD6) and economic status indicator (ADU) are the two most important fertility differentials among the study population. These variables also were among the three most significant contributors (NcD6, LFE and ADU) identified by the stepwise regression of RCEB on socio-economic factors. The total variance accounted for by these variables were 40%.

A separate multiple and stepwise regression of CEB and RCEB on proximate as well as socio-economic factors revealed that duration of marriage, frequency of marriage, breast-feeding, reasons for having children, child mortality, economic status, education and religion as the major variables affecting the variation of fertility among the

study population. However, the proportion of variance in fertility accounted for by there two sets of facotrs taken one group at a time was not more than 40%.

Therefore, in order to investigate the combined effect on fertility, proximate and socio-economic variables were mixed and a stepwise multiple regression was run. Out of 14 variables, 9 (5 proximate and 4 socio-economic, were selected by the regression model. These 9 variables jointly with a significant multiple correlation coefficient (R = 0.78) accounted for 60.9% of the variation in CEB among ever-married women in the study weredas. On the other hand, a similar stepwise regression of RCEB on these 14 variables identified 11 of them (8 proximate and 3 socio-economic) as important ones. They accounted for 50.6% of the variation in RCEB.

Thus, consistent with the previous observation, this final analysis also identified child mortality (NCD6), Duration of marriage (DUM) and duration of breast-feeding (DBF) as the major contributors to the variance in fertility among ever-married women in the two weredas considered.

7.2 Recommendations

Based on the findings, the study suggests the following areas of policy intervention:

1. In order to lower fertility child mortality should be reduced because it was found that child mortality is directly related to fertility.The reduction may reduce the desire for large family size. It would also produce favourable attitude

to wards the use of contraception that may lead to purposeful limitation of fertility. This may be done through introduction of maternal and child health services.

2. Level of female education should be improved at least up to junior-secondary level because it was observed that as level of formal education increased fertility was generally declining. As indicated by the study, raising the level of women's education would reduce high fertility in a number of interrelated way. It would directly increase age at first marriage and hence reduce duration of marriage that was found to be the single most important determinants of fertility in the study area. Although women's education was found to reduce duration of breast-feeding and abstinence that are important in depressing fertility, it would improve women's knowledge, attitude and practice of contraception that may counterbalance its positive effect. In addition, as evident from the finding, women's education would not only tend to reduce expected dependency on children (through improving their status) but also the economic contribution of children to the household. This is because it was found out that children's labour contribution to farming and proportion of women with formal education were inversely related. Moreover, increasing women's education would mean increasing the cost of child rearing because it was observed that women with formal education tended to rate cost of education as important part of cost of child up bringing.

3. An effort should be made to directly raise the legal minimum age at marriage for females up to the age 20 years or more because it was found that although the mean age at first marriage was 16 years, the average age at first birth was about 19 years in most peasant Associations. That means the plan to increase it up to any age below 20, such as 18 years as proposed by the previous Ethiopian government (ONCCP 1988) may not bring substantial change on fertility. The study found that the differences in MCEB between women married at age below 16 years and at age 20 or older were 1.32 in Ezha-and- Wolene, 2.17 in Cheha and 1.68 for the whole sample. However, legal enforcement of minimum age at marriage as high as 20 years is not an easy task. However, an attempt may be made to create awareness among the population (especially among the elders who usually arrange marriage) of the danger of early marriage and the problem of rapid population growth.

4. An attempt should be made to improve the very low level of contraceptive use among the population. It seems that there are a few favourable conditions to do this. First of all about 14% of the respondent (both sex) had intention to use contraception some time in the future. So such kind of people can be used to diffuse the knowledge and practice of contraception among the wider population.

For this of course, provision of family planning services is required. In this regard, it must be noted that since men were found to be more resistant to the use of family

planning than women, attention should also be given to males in family planning education. Moreover, it was found that some women practised prolonged breast-feeding purposely to achieve desired spacing between births. Therefore, such women may be interested to use contraception for the same purpose if it is easily accessible. At the same time they may help to disseminate its practice.

5. Finally one of the useful areas of research would be in general the identification of direct and indirect and total effects of the proximate and socio-economic factors on fertility using path Analysis. Specifically, the actual economic and old age security value of children to parents among different ethnic groups seems promising areas of investigation in the future because unlike many other rural populations, respondents (both sexes) in the study area considered perpetuation of the family /clan/ name as the primary motive for having children. Thus, one may search the reason why this is so. In addition, the relationship between economic status and fertility was found to be positive but the specific path was not clearly identified. Hence future research may go ahead in this direction.

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APPENDIX 1

ADDIS ABABA UNIVERSITY

SCHOOL OF GRADUATE STUDIES

DEPARTMENT OF GEOGRAPHY

Socio-economic and Fertility Questionaire, Cheha and Izha- and -Welene Wredas, 1993

PART I HOUSEHOLD ROSTER CONFIDENTIAL

Identification

1. Wereda _____ 3. Village _____

2. Peasant Association _____

Note: Administer the household roster below only to head of household or spouse.

1. Name of usual residents (start with the head of house hold). 1)	age 2)	sex Male 1 Female 2 3)	Current marital status of persons aged 12 and over. Never married 1 Married 2 Widowed 3 Divorced 4 Separated 5 4)	Check(✓) persons eligible for individual questionnaire
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				

Eligible: All evermarried women aged 15-49 who usually live in the household.

: All currently married men who usually live in the household.

NOTE TO INTERVIEWERS

1. Interviewer:s See part I No. 4 and tick the appropirate code.

Currently Married	1
Widowed	2
Divorced	3
Separated	4

2. Interviewer: See No 43 and tick the appropirate code

Currently pregnant	1
Not currently pregnant	2
[illegible] or do not know...	9

3. Interviewer: See No 44 and tick the appropirate code

Has ever used a contraceptive method	Has never used a contraceptive method
If Not Pregnant or do not know skip to 47	If Not Pregnant or do not know skip to 49
If Pregnant skip to 50	If pregnant skip to 50

PART 2: HOUSEHOLD CHARACTERISTICS

Note: Administer the household questionnaire to the head of the household or spouse or to any adult who is a usual resident.

5. Is this /are these/ dwelling(s) owned or rented?
   Owned ..... 1 (Skip to 7/ Rented 2

6. How much did you pay for rent last month ?
   ..... / in birr /

7. Characteristics of dwelling unit:
   1. Number _____ / if thatched/
   2. Area _____jef /if thatched/
   3. Rooms _____ /if modern/

8. Do you have the following items in your household?

	Yes	No
Radio / Radio Cassette Recorder/	1	2
Spring bed	1	2
Wrist watch	1	2
Mat /Dirjipa/	1	2
Eating Mat /Ywadar/	1	2

PART 3: CHARACTERISTICS OF THE RESPONDENT

Note: Administer woman's schedule below only to ever married woman aged 15-49 who usually lives in the household.

9. How long have you lived in urban areas?
   (such as Addis Ababa, Jima, Araro, DireDawa, Harrar, Woliso etc.)
   ..... Years

10. Have you ever attended School?
    Yes ..... 1 No ..... 2 /Skip to 12/

11. What was the highest level of school you attended?
    Primary (1-6) ... 1 Junior and above 2
    (Skip to 13)

12. Can you read and write easily or can only read or can only write?

only read ..... 1 only write .....2 Read & write...3

13. What is your Religion?

Christian .....1 Moslim .....2 Other /spesity/...3

14. Do you worship the followings?

	Yes	No
"Wak" (Male cult)	1	2
"Damwamwit" /female cult/	1	2
"Boza" /Thunder God/	1	2

15. How many times do you usually attend a church or a mosque in a week?

Every day .....1 Once 4

More than twice ..2 Only on known holidays...5

Twice .....3 Not at all 6

16. How many monthly religous gatherings /"Mahiber"/ do you and your husband regularly attend?

...../in Number/

17. How many live births did your mother have including you and any children that have died? .....

18. How many children have died before age five?

PART 4: FERTILITY

19. Have you ever had a live birth?

Yes ..... 1 No .....2 /skip to 24/

20. How many of your male and female children are currently living with you?

...../males ...../females/ ...../total/

21. How many of your male and female children are currently living away from home?

...../Males/ ...../females/ ...../Total/

22. How many of your male and female children have died after birth?

...../Males/ ...../Females/ ...../Total/

23. Interviewer sum answers to 20, 21 and 22 and put the sum here .....

Now Ask:- Just to make sure I have this right, you have had .... live births.
Is this correct? (sum)

Yes..... 1 No.....2 (correct the response by asking questions 20-22 once again).

24. Sometimes some pregnant women experience abortion or miscarriage or give birth to a dead child. Have you ever had such experience?

Yes ....1 No.....2 /skip to 26/

25. How many times did you experience such things?

...../Number of times/

26. In some places pregnant women abort intentionally.

A. Have you ever-heard of such a thing in this community?

Yes .....1 No.....2

B. Have you ever heard of this in some other places?

Yes.....1 No.....2

27. Do you approve the practice of induced abortion?

Yes.....1 /skip to 29, B/ No.....2

28. A- Why do you disapprove?

a. It is dangerous to the mother 1
It is sinful 2
I want to have many children.....3
my husband is against 4
Other /spesify/ .....

B. was there any member of this household who died in the last twelve months?

1. If yes, how many? ..... 2. If No, (skip to 29/

FERTILITY HISTORY

Birth oreder	What was the name of this child?	Was that a male or a female	In what month/ year/ season was he/she born?	Did you breastfeed?	How old was name when you first started giving her/him any kind of food beside breast milk?	How old was Name when you stopped breast-feeding all together	Is he she still alive?	If dead how long this the child live?
	29	30	31	32	33	34	35	36
Last live		Male 1 Female 2	Month Year Season (....)	Yes 1 No 2 skip to 35	Months___ still breast feeding skip to previous Birth	Months_ Don't know 98	Yes Skip to (Previous Birth)	Years Months Days
Nexts to last		M 1 F 1	Month Year Season	Yes 1 No 2 skip to 35	Months Don't know 20	Months Don't know 99	Yes 1 (skip to previous birth)	Years Months Days
Previous live birth		M 1 F 2	Months Year season	Yes 1 No 2 skip to 35		Months_ Donot know (9)	Yes 1 (skip to previous birth)	Years Months Days
Previous live births		M 1 F 2	Month Year Seasons	Yes 1 No 2 skip to 35		Month_ Donot know (9)	Yes 1 skip to previous birth	Years Month Days

37. During which 9 live - births did you have milking cow?

..... /in number of times/

38. In this community while a woman is breast - feeding how long couples should sleep separately?

A month 1
Two months 2
Three months 3
Five months - 5
Four months 4
Do not know 9
Other .....

39. When do you usually breast - feed your child?

on demand /when crying/ 1
on schedule 2
When it is convient to me 3
other /spesify/ .....

40. At which time during 24 hours do you usually breast - feed your child?

At night /while sleeping/ 1
during coffee time 2
during : meal time 3
other /specify/ .....

41. How long did you stay after next to the last birth before you resume menstration?

..... /months/

42. How long did you usually stay before the Next birth

..... /months/

43. A. Are you pregnant now?

Yes ..... 1 No ..... 2 /skip to 44/
Don't know..... 9

B. Do you prefer your Next child to be a boy or a girl?

Girl ..... 1 Boy ..... 2 Either 3

PART 5: FAMILY PLANNING /CONTRACEPTIVE USE/

44. In order to space births or control pregnancy some people use the following method of family planning.

A. Which methods have you ever heard (read the list) ..... /if ever heard, put (✓) in column A

B. /If ever heard/which method have you ever used? ...../ if ever used, put (✓) in column B.

	A		B	
1. Pills				
2. Injection				
3. Intra utrin device				
4. Female Sterilization				
5. Male Sterilization				
6. Condom				
7. Rhythm				
8. Douche				
9. Abstinence				
10. Local medicine				

45. In order to have desired spacing between births some women breast - fed their children for several months .....

A. Have you ever heard of this?

Yes 1
No 2

B. If yes, have you ever practiced it for this purpose?

Yes 1
No. 2

46. Do you approve of use family planning method (method of birth control) for spacing births and/or controlling pregnancy.

Yes 1
No. 2

47/ Are you /or your husband/ currently using a method of family planing that keep you from getting pregnant?

Yes ..... 1 No..... 2 /skip to 49/

48. What method are you using?

..... /skip to 50/

49. As far as you know, is it physically possible for you (or your husband) to have a child, supposing you wanted one?

Yes ..... 1 No..... 2 /skip to 53/
Do Not know 9

50. Do you think that (or your husband) may use a family planning method at some time in the future so that you will not become pregnant?

Yes..... 1 /skip to 52/ No..... 2
Undecided 3

51. Would you mind telling me why you and your husband do not want to use any family planning method?

Want to have as many children as possible 1
It is against religion 2
It causes health problems 3
Husband is against 4
The method is difficult to obtain 5
The method is too expensive 6
I do not know about it 7
Other /spesify / 8

52. (For currently pregnant women who have ever used a contraceptive method). You told me that you had used some family planning method in the past. Can you tell me why you stopped using them?

Wanted to get Pregnant 1
Has side effects 2
Husband was against 3
Other /spesify/ 7
Was too expensive 4
Was too difficult to get...5
Due to religious oposition..6

53. (For women who have never used a contraceptive method) Have you ever discussed with your husband about family planning method ?

Yes 1
No..... 2

PART 6: FAMILY SIZE PREFERENCE

54. (For women who have no live birth (see 23/ and whose answer to question 49 is 1 or 2.) Do you want to have any children some day?

Yes 1
No ..... 2 /skip to 60/

55. How many male and female children do you want to have?

..... /Male/ ...../Female/ Total..... /skip to 57/
up to God 1 (skip to 58)

56. (For women who have one or more live births (see 23) and whose answer to question 49 is 1 or 2). Do you want to have additional children some day?

Yes 1
No ..... 2 /skip to 60/

57. How many additional male and female children do you want to have?

...../ Males/ ..../Females/ ...../Total/59 to/

up-to-God.....1

58. If God permits you to have as many children as you want, how many more male and female children would that be?

...../Males/ ...../Females/ ...../Total/

up-to-God.....1 (Skip to 60)

59. After having born the exact number of children you desired, if the ratio of boys to girls is not as you want, what you would do?

If more boys, does not matter 1
If more girls, does not matter 2
Continue to have additional children 3
Stop bearing children 4
Do not know 5
Other /specify/ 6

60. Have you ever discussed with your husband about the number of children that you want to have?

Yes ..... 1 /skip to 62
No 2

61. Why Not?

Shame ful /indecent/ 1
It is not our business, It is God's 2
Do Not know 3
Other /specify/ 4

62. (For women who have two or more live births) Thinking back to the time before you became pregnant with your last child, had you wanted to have any more children?

Yes ..... 1 No ..... 2 /skip to 64/

63. (For women who have one live birth) Thinking back to the time before you became pregnant with your child, had you wanted to have any children?

Yes ..... 1 No..... 2

PART 7: MARITAL HISTORY

64. Have you ever been married once or more than once?

Only once?..... 1
More than once 2

How many times have you been married? ..... /Number/ (Skip to 66)

/If more than once/

65. /If once/ How many years back did you marry?

..... /Years/ /skipt ot 67/

66. /If more than once/ how long did you live?

1. with your first husband? ..... /Year /s/ /
2. with your second husband? ..... /Year(s)/
3. with your third husband ? ...../ Year(s) /
4. with your fourth husband? ..... /Year (s) /

67. What was your age at first marriage? .....

68. What was your age when you give birth to your first baby?
..... /Years/

69. (For currently married women) Since the last five years have you ever separated /voluntarily or involuntarily/ from your husband for a consquitive 6 months time.

Yes..... 1 No. ..... 2 / . /

70. Have you ever been in polygamous marriage ?

Yes ..... 1 No. ..... 2 /skip to 73/

71. If currently married. How many wives does your husband have including you?

72. Where his other wives (wife) are (is) living?

In the same compound 1
In the same village 2
In the same peasant association 3
In other peasant association ... 4
In other warada 5
In urban areas 6

PART 8: WOMEN's PERCEPTION OF VALUE OF CHILDREN

73. Do you expect any help from your children by now or at any time in the future?

Yes ..... 1 No..... 2 /skip to 75/

74. How high is your expectation that your children will support you in your old age?

Very high ..... 1 Very low 2

Do not know -- 9

. Question 75-80 are for women who have atleast a child.

75. Have you ever received any help (labour, money, etc) from your children?

Yes ..... 1 No ..... 2 /skip to 80

They are too young - - 3

76. What kind of help do you get from children who are living with you?

Farm Labour ..... 1 Money and/ or gift
Labour for household and other services 3
I have No children who are living with me 4
They do not help me 5
Other /spesify / .....

77. What kind of help do you get from children who are single and living away from home?

Money and or/gift 2
Envitation to children's home 2
No single children living some where else 3
Do not help 4
Other /spesify/ .....

78. What kind of help do you mostly get from children who are married and living away from home?

Money and/or gift 1
Envitation 2
Nothing 3
Other/spesify/ 5
No married children 7

79. (If answer to Questions 77 and/or 78 is 1) · How often your children give you money and or gift?

Every month 1
During holidays 2
when they afford 4
When I need 3
Other/spesify/ 5

80. Compared to the past, how do you evaluate the current cost of child learning in the community?

Increasing rapidly 1
Very low 3
Other /spesify/ .....
Decreasing rapidly 2
About the same as the past... 4
Do not know 9

81. What is the most important part of the cost of child rearing?

Food ..... 1 Education ..... 2 Health 3
Clothing ..... 4 Other/spesify/ 5

82. Who usually help parents to cover the cost of children on education, health and clothing?

Elder children 1
Other relatives 2
Children themselves 3
No one 4
All jointly ..... 5 Other/spesify .....

83. At what age do children in this community usually start to engage in any kind of work? (feching water and fuel wood. cleaning house and utencles, herding, carrying masage and waching house)

..... Year/Males/ .....Year /femalss/

84. At what age do children usually engage in productive work such as ploughing, planting, up-rooting, and tanning of Ennset, making mat, fencing and spliting wood, mowing grass etc?

.....year /Males/ .....year /Females/

85. Have your children produced more wealth or given you more assistance than the money spent on them as children?

Yes ..... 1 About the same 2
No ..... 3 Do not know ..... 4 Other .....

86. At what age do children who have not been to school earn enough or produce enough to make-up for what has to be spent on them?

7-10 years ..... 1 10-14 years 2
15-20 years ..... 3 Above 20 years 4
Only when employed ..... 5 Others .....

87. Do you believe that children's growth is determind by fate?

Yes ..... 1 No ..... 2 Do Not know 3

88. Is it advantageous or disadvantageous or both advantageous & disadvantage to have as many children as God/Alah/permits?

Advantageous ..... 1 (91) Disadvantageous ..... 2 (skip to 91)
(...) It has advantages as well as disadvantages 3
Do Not know ..... 4 /skip to 91/

89. If it more advantageous or more dis-advantagous or does it have both advangage and disadvangage to have as many children as God/Alah/permits?

More advantageous ..... 1 /skip to 91/
More disadvantageous ..... 2 /skip to 91/
It has advantage as well as disadvantage 3
Do Not know ..... 4 /skip to 91/ Other/spesify/ .....

90. Is it more advantageous or disadvantageous or equally advantageous and disadvantageous?

More advantageous 1
More disadvantageous 2
Equally advantageous & disadvantageous 3
Do not know 4

91. Here is a list of opinions that people some time feel about having many children.

For each statment please tell me first whether you agree or disagree, then whether you strongly or moderately agree or disagree.

Strongly agree ..... 4 Moderately disagree 2
Moderately agree .... 3 Strongly disagree 1

		4	3	2	1
1.	When parents having many children get old or disabled they can have atleast one grown up children who may support them.				
2.	Parents having many children are respected by the community.				
3.	Having many children ensures that there may be one or two who will be willing to help				
4.	Parents having many children, even if they are healthy and well to do can receive a great deal support .				
5.	Parents having many children feel very happy even if they are not supported by their children .				
6.	Parents with many children have sufficient supply of labour that can be used in and out of the house hold.				
7.	Having many children ensures that some may grow-up .				
8.	Having many children ensures that there may be one or two who will be successful enough to be able to earn a lot.				
9.	A mother having many children gets great acceptance from the husband's family.				
10.	A woman having many children is less liable to divorce than a woman having a few children.				

		4	3	2	1
1.	Parents having many small children spend much money on food, clothing, education & health.				
2,	It is difficult for a mother of many small children to get employed outside home.				
3.	A mother having many small children fail to carry out her household chores properly.				
4.	It is difficult for a mother having many children to easily manage and rear her children.				
5.	If there are many children, it is impossible to educate them all.				
6.	Parents having many small children are forced to give up a lot of other things that they enjoy				
7.	Parents having many small children face problem of providing enough food to the family.				
8.	Having many children may caused r y disagreement and problems between husband and wife				
9.	Poor parents having many s small children cannot dress well.				
10.	A woman having many children can not divorce her husband even if she is too much operessed by the husband.				

92A. Here are list of main reasons why people ingeneral want children. Please rank them from most to least important as it applies to you.

1. Love of Children
2. Continuity of the of the family /clan/name
3. Help before old age
4. Old age security
5. Stablity of marriage
6. Social acceptance

92B. If answer to Question 24 is less than 8 and answer to Question 49 is 1 or 20 / Do you want to bear children as far as you prepare "Samer" festival?

Yes ..... 1 No..... 2 /skip to 94/

93. Which "Samer" do you like to prepare?

Light ..... 1 Tenth 2

94. When you think of a large family, how many children would be in it?

..... children

PART 9: WORK STATUS AND HOUSEHOLD INCOME INDICATIONS

95. Are you currently working or doing any thing to get money in your home or away from home?

Yes..... 1 No..... 2 /skip to 98/

96. What is your main work?

Self -Employed ..... 1 Employed by some one 3
Working in family business 2
Government - Employed 4
Farming..... 5 Other /Spesify/ .....

97. Do you do this work at home or away from home?

At home ..... 1 Away from home 2

Question 100 & 101 are only for currently married women.

98 Is your husband currently working or doing any thing to get money?

Yes ..... 1 No..... 2 /skip to 100/

99. What is his main work?

Self - Empdoyed 1
Working in family business 2
Employed by some one 3
Government employed 4
Farming ..... 5 Other/spesify/ .....

100. Question 100-102 are only for women who are farmers or their husbands are farmers /or having farm land/

Before the proclamation of rural land reform in 1975 what was your landownership status?

Landless .....1 /skip to 102/ Tenant 2
Landowner & tenant ..... 3 Land owner 4
Landlord 5

101. What was the size of your holding?

..... "Zeng" /length/ ....."Zeng" /width/

102. What is the size of your present holding?

...."zeng" /length/ ....."zeng" /width/

103. How many of the following domestic animals do you have?

	Owned /Number/		Not owned /loan/ /Number/
1. Cows		1	
2. Calves		2	
3. Heifers		3	
4. Oxen		4	
5. Bulls		5	
6. Sheep		6	
7. Goats		7	
8. Horses		8	
9. Mules		9	
10. Donkeys		10	

104. How often do you slaughter Bulls or oxen during "Meskel" or "Arefa" ?

Every year 1
Every two years 2
Every three years ... 3
Every four years 4
No fixed schedule 5
Not at all 6

APPENDIX 2

Means and Coefficents of Variation of The selected Socio-Economic Status indicators by PAs and Weredas, Cheha and Ezha-and-Welene, 1993

PAS & Weredas	Adu in M^2 Mean	Adu in M^2 C.V.	ALHin hect. Mean	ALHin hect. C.V	FAS Mean	FAS C.V.	NEH Mean	NEH C.V.	TLU Mean	TLU C.V.
SISE & d	32	33.0	0.37	11.6	2.5	7.1	21.1	14.0	2.5	9.6
AYANDA	28	32.7	0.33	72.7	2.4	62	10.6	56.5	2.3	65.4
AEWAN	27	36.3	0.31	54.3	3.6	63.7	9.9	86.9	2.1	85.5
EMDIBIR	22	62.3	0.10	180.3	4.2	54.6	3.9	175	0.6	54
CHEHA WEREDA	27	39.3	0.28	102.0	3.4	103.3	11.4	16.2	1.9	13.3
YASYA	19	27.7	0.41	10.0	3.7	72.9	2.6	192	2.4	88
CHELAS	23	35.2	0.64	47	2.9	72.3	12.9	58.8	2.7	66.7
ZIGBA.B	26	31.2	0.48	57.1	3.7	53.0	7.9	97.1	3.0	66.8
AGENA	21	47.1	0.17	128.9	2.8	58.1	4.6	127	1.2	20.0
WKYE	25	36.6	0.50	92.5	3.4	58.2	17	56	2.5	80.0
SHEBRA	20	34.4	0.38	63.2	4.5	44.0	10.8	67	1.7	97.1
EZHA & WELENE	22	34.0	0.41	80.3	3.1	108.0	9.3	20.4	2.3	16.1
TOTAL	25	67.5	0.33	95.0	3.3	106	10.4	18.0	2.1	163

Source : Own Survey:

Economic Status Scale

If ADU < 25 = 0	If ADU > 25 = 1
If ALH < 0.35 = 0	If ALH > 0.35 = 1
If TLU < 2.5 = 0	If TLU > 2.5 = 1
If NEH < 10 = 0	If NEH > 10 = 1
If FAS > 3 = 0	If FAS < 3 = 1

Low Economic Status = ADU+ALH+TLU +NEH+FAS= 2

High Economic Status = ADU+ALH+TLU+NEH+ FAS= 3

APPENDIX 3

Percentatge of Women, by Knowledge, and Attitude Towards Induced Abortion Reasons for Disapproval, PAS and Weredas, Cheha and Ezha-and-Wolene, 1993.

PAS and Weredas	Knowledge of Induced Abortion				Attitude Toward Indused Ab.		Reasons for Disapproval		
	Ever heard		Never heard		Approved	Disapproved.	Sinful.	Dangerous.	Donot know
	Gurage land	Other places.	Gurage land	Other Places.					
SISE & D.	16.3	39.5	83.7	59.5	0	100	65.8	4.5	30.0
AYANDA	0	14.0	100	86.0	0	100	98.0	0.0	2.0
AEWAN	4	8.0	96.0	92.0	2	98	100	0.0	0.0
EMDIBIR	21.1	23.9	79.9	76.1	3	97	57.0	30.0	13.0
CHEHA WEREDA	13.4	21.6	86.6	78.4	1.7	98.3	73.6	15.3	12.1
YASYA	3.4	4.0	96.6	9.6	1.7	97.3	100	0	0
CHEZH.S.	1.8	2.0	98.2	98.0	0.0	100	98.3	1.7	0
ZIGBA.B	4.1	4.1	97.9	95.9	0.0	100	88.0	7.0	5
AGENA	6.4	7.0	93.6	9.3	2.1	97.9	89.0	3.0	8
WKYE	3.8	6.4	96.2	6.4	1.3	98.7	97.0	1.0	2
SHEBRA	1.3	1.5	98.7	98.5	0.0	100	89.0	3.0	8
EZHA-&-WOLENE	3.3	3.6	96.7	96.4	0.0	94.9	93.4	6.6	4.1
TOTAL	7.6	11.3	92.4	88.7	1.2	98.8	95.3	9.9	7.9

Source:Own Survey

APPENDIX 4

Number of Women by Ranks Assigned to Reasons for Having Children by PAS, 1993

PAS	Rank	Love of Children	Continuity of the family name	Help befor old age	Old age security	Stability of Marriage	Social Acceptance
S	1	8	17	6	5	5	2
I	2	15	7	10	3	2	6
S	3	5	4	7	14	8	6
E	4	9	5	7	3	10	9
	5	3	8	9	9	10	4
	6	3	2	4	9	8	16
TOTAL		43	43	43	43	43	43
A	1	1	20	14	7	6	9
Y	2	28	10	5	5	5	3
A	3	12	10	11	17	4	5
N	4	4	7	13	6	20	6
D	5	1	8	10	11	13	14
A	6	11	2	4	11	9	20
TOTAL		57	57	57	57	57	57
A	1	8	8	9	11	7	7
E	2	14	13	5	7	6	5
W	3	11	9	13	7	6	4
A	4	3	7	15	9	12	4
	5	5	10	4	11	13	7
	6	9	3	4	5	6	23
TOTAL		50	50	50	50	50	50
E	1	18	57	19	30	13	5
M	2	49	22	27	23	11	8
D	3	28	21	33	24	20	16
I	4	7	22	41	30	26	16
B	5	19	13	9	23	56	23
I R	6	21	7	13	12	16	74
TOTAL		142	142	142	142	142	142
Y	1	7	14	10	16	8	5
A	2	22	14	8	5	4	5
S	3	14	14	9	10	7	3
Y	4	5	12	13	6	14	7
A	5	3	2	10	11	18	14
	6	7	2	8	10	7	24
TOTAL		58	58	58	58	58	58

PAS	Rank	Love of Children	Continuity of the family name	Help before old age	Old age security	Stability of Marriage	Social Acceptance
A	1	6	12	11	5	8	5
G	2	14	15	6	7	3	2
E	3	13	5	11	8	3	5
N	4	4	5	7	9	16	6
A	5	2	8	6	10	11	11
	6	8	2	6	8	6	18
TOTAL		47	47	47	47	47	47
Z	1	8	17	12	12	13	13
I	2	21	4	16	10	15	5
G	3	18	17	12	21	2	5
B	4	6	16	20	8	14	10
A.B.	5	5	12	8	18	12	19
	6	16	8	6	5	18	22
TOTAL		74	74	74	74	74	74
C	1	8	19	7	11	6	6
H	2	24	10	8	4	7	4
E	3	8	8	14	12	8	7
Z	4	5	10	16	10	10	6
A	5	0	9	5	15	16	13
S	6	12	1	7	5	10	21
TOTAL		78	78	78	78	78	78
W	1	5	18	10	21	19	5
K	2	26	16	18	7	4	6
Y	3	26	15	10	12	5	12
E	4	5	16	26	8	14	9
	5	5	8	10	16	24	14
	6	11	5	4	14	12	32
TOTAL		78	78	78	78	78	78
S	1	2	20	7	20	18	9
H	2	24	15	8	5	6	7
E	3	34	10	13	15	6	7
B	4	3	18	20	13	13	5
R	5	3	5	20	15	23	10
A DEN	6	9	7	7	7	9	37
TOTAL		75	75	75	75	75	75

APPENDIX 5

Number of Women by Ranks Assigned to Reasons for Having Children by Weredas, and Computation for Coefficient of Discordance, Cheha and Ezha-and -Wolene, 1993

WEREDA	RANK	TYPES OF REASONS						WEREDA	RANK	TYPES OF REASONS					
		Love of Children	Continuity of the family name	Help befor old age	Old age security	Stability of Marriage	Social Acceptance			Love of Children	Continuity of the family name	Help before old age	Old age security	Stability of Marriage	Social Acceptance
C	1	35	102	48	53	31	23	E	1	36	96	57	85	72	43
H	2	106	52	47	38	24	25	Z	2	141	78	64	38	39	29
E	3	56	44	64	62	38	28	H	3	103	69	69	78	31	39
H	4	23	41	76	48	68	35	A	4	28	77	106	54	81	43
A	5	28	39	32	54	92	48	&	5	18	44	57	85	104	81
	6	44	14	25	37	39	133	WOLENE	6	63	25	36	49	62	154
	Ri	911	781	948	999	1158	1365		Ri	1207	1137	1317	1330	1459	1719
	ERi = 6163								ERi = 8169						
CHEHA	1	71	198	105	138	103	66								
and	2	247	130	111	76	63	54								
EZHA	3	159	113	133	140	69	67								
and-	4	51	118	178	102	149	81								
WOLE	5	406	83	91	139	196	126								
NE	6	107	39	61	86	101	287								
	Ri	2118	1918	2259	2329	2618	3051								
	ERi= 14,293														

Cheha

W= 212665/17 905440=0.01

Ezha - and-Wolene

W= 214,555.5/31777410= 0.006

Eheha dnd Ezha-and-Wolene

W= 96493560/97389810= 0.09

Cofficient of Discorcordance=

$W = 12S/m^2(N^3-N)$, Where

m= number of respondents,

N= number of ranks

$S = E(Ri - \frac{ERi}{N})^2$,

12 is Constant

W varries from 0(perfect disagreement)to 1 (perfect agreement)

APPENDIX 6

Percentage of Respondents by Ranking of Reasons for Having Children by Sex, and Weredas,

WEREDA	Rank	Love of Children		Continuty of the Family Name		Help before Old Age		Old age Security		Marriage Stability		Social acceptance		Total
		Female	male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
	1	12.0	7.8	34.9	45.3	16.4	15.6	18.2	17.2	10.6	10.9	7.9	3.2	292
	2	36.6	40.6	17.8	7.8	16.1	20.3	13.0	10.7	8.2	7.8	8.6	12.6	292
CHEHA	3	19.2	12.5	15.8	21.9	21.9	25.5	21.2	26.7	13.0	15.6	9.6	12.3	292
	4	7.9	14.1	14.0	12.5	26.0	15.6	16.4	17.2	23.3	23.4	12.0	17.2	292
	5	9.6	8.3	13.4	3.1	11.0	15.6	18.5	21.8	31.5	32.8	16.4	20.4	292
	6	15.1	17.2	4.8	3.1	8.7	9.4	12.7	7.8	13.4	6.3	45.5	50.2	292
	1	9.3	14.1	24.7	19.8	14.7	14.6	21.9	20.8	18.5	18.8	11.1	11.9	389
EZHA	2	36.2	38.5	20.1	19.8	16.5	10.3	9.8	13.5	10.0	18.8	7.5	3.1	389
	3	26.5	19.7	17.7	22.9	17.7	10.7	20.1	17.7	8.0	18.0	10.0	11.0	389
and	4	7.2	14.1	19.8	16.7	27.2	13.5	13.9	19.8	20.8	11.5	11.1	24.4	389
WOLENE	5	4.6	9.4	11.3	12.5	14.7	12.5	21.9	15.6	26.7	25.0	20.8	25.0	389
	6	16.2	23.4	6.4	4.2	9.3	10.4	12.6	7.3	15.9	10.4	15.9	49.3	389
	1	10.0	8.8	29.7	32.5	15.4	15.0	20.3	19.4	15.0	15.6	10.5	8.7	681
	2	36.0	39.4	18.5	17.5	16.3	18.1	11.2	12.5	9.3	14.4	7.5	12.5	681
TOTAL	3	23.0	16.3	16.6	22.5	19.5	18.1	20.6	21.3	10.1	16.3	10.3	5.5	681
	4	7.5	11.3	17.3	15.0	26.1	25.0	15.0	18.8	21.9	16.3	11.5	13.6	681
	5	6.8	6.3	12.2	8.8	13.4	13.8	20.4	18.1	28.8	28.3	18.5	24.7	681
	6	15.7	16.3	5.7	3.8	9.3	10.0	12.6	7.5	14.8	15.0	42.1	47.4	681

APPENDIX 7

ANDVA of Table of Regression Model For RCEB (Eight Explanatory Variables): Cheha and Ezha - and-Wolene, 1993

Source of Variation	Degree of Fereedom	Sum of Squares	Variance	F-Ratio
Model (Regression)	8	60.41	7.55	4.63*
Residual	573	935.05	1.63	
Total	581	995.46		

* P≤0.005

APPENDIX 8

Summary of Multiple Regression on RCEB (DUM, DBF, AFM, NTM, ISS, MR, FM1 and TRCH2)

Variables	Correlation Cofficient (b)	Beta Cofficient (B)	Partial F	Correlation Cofficient
DUM(1)	-0.0068	-0.0396	0.816	-0.0377
DBF(2)	-0.0134	-0.0886	4.656*	-0.0898
AFM(3)	-0.0337	-0.0948	5.094*	-0.0939
NTM(4)	-0.2861	-0.1110	6.354*	-0.1047
ISS(S)	-0.1866	-0.0596	2.110*	-0.0606
MR(6)	0.3203	0.0641	2.219*	-0.0606
FM1(7)	-0.2946	-0.0744	2.739*	-0.0690
TRCHZ(8)	-0.2801	-0.1112	7.490*	-0.1136

Undjusted ^{R}RCEB.12345678=0.25 * PL 0.05

Undjusted R^2 = 0.061

UndjustedR^2 = 0.048

Regression Equation

RCEB = 3.397+-0.007DUM+-0.013DBF+-0.034 AFM+-0.286NTM+-187ISS+0.320MR+-0.295FM1+-0.280 TRCH2

APPENDIX 9

Summary of the Stepwise Multiple Regression Dn RCeB (TRCH2, DBF, AFM, NTM, FM1, MR, and ISS) N= 574

Step No.	No, of Variables Entered	Multiple Correlation and Related Parameters: Multiple R	Multiple R^2	Changes in R^2	Standared Error of Estimate	Variables Entered	Values in the Final Step: Cofficients b	Cofficients B	F-to	Cons Delete	Partial Correleation Cofficients tant
1	1	0.122	0.015	0.015	1.9466	TRCH2	-0.279	-0.111	7.430*		-0.113
2	2	0.161	0.026	0.011	1.3003	DBF	-0.014	-0.093	5.230*		-0.095
3	3	0.190	0.036	0.010	1.2941	AFM	-0.032	-0.089	4.586*		-0.089
4	4	0.210	0.044	0.008	1.2883	NTM	-0.295	-0.115	6.812*	3.22	-0.108
5	5	0.224	0.050	0.006	1.2811	FM1	-0.293	-0.074	2.709*		-0.069
6	6	0.236	0.056	0.005	1.2787	MR	0.379	0.076	3.425*		0.077
7	7	0.244	0.059	0.004	1.2772	ISS	-0.195	-0.062	2.303**		-0.063
All Variables Included in the Model		0.250	0.061	0.002	1.2774						

*PL 0.005
**PL 0.05

Regression Equation

RCEB = 3.22+-0.279 TRCH2 +- 0.014DBF+_0.032AFM+-0.295NTM+-0.293FM1
+0.379MR+-0.194ISS

APPENDIX 10

Intercorrelation Matrix

Variables	Age	MR	ADU	LFE	REL	CEB	NCD6	RCEB	DBF	ALIBI	KFP	AFP	DUM	ISS	FML	LFBFL2	KFLBF	AFM	NMC	TRCH2	CSLH	
AGE	1.00																					
MR	-0.30	1.00																				
ADU	0.20	-0.03	1.00																			
LFE	-0.23	0.10	0.06	1.00																		
REL	0.004	0.02	-0.05	0.17	1.00																	
CEB	0.64	-0.17	0.21	-0.11	0.05	1.00																
NCD6	0.31	-0.13	0.02	-0.13	-0.04	0.49	1.00															
RCEB	-0.11	+0.04	-0.05	0.01	0.02	0.22	0.61	1.00														
DBF	0.14	-0.07	-0.04	-0.16	-0.02	-0.08	0.04	-0.11	1.00													
ALIBI	-0.22	0.06	-0.10	0.03	-0.06	-0.41	-0.05	0.04	0.59	1.00												
KFP	0.02	+0.02	-0.02	-0.25	-0.08	-0.12	0.04	0.03	0.22	0.10	1.00											
AFP	0.004	-0.02	-0.07	-0.09	-0.01	-0.15	0.06	0.09	0.04	0.02	0.06	1.00										
DUM	0.89	-0.28	0.17	-0.24	-0.02	0.64	0.32	-0.08	0.15	-0.24	0.05	-0.02	1.00									
ISS	0.004	-0.01	0.02	-0.03	-0.03	-0.08	-0.05	-0.09	0.05	0.06	0.03	-0.02	0.02	1.00								
FML	-0.10	-0.02	-0.02	0.06	-0.07	-0.07	-0.03	-0.002	-0.01	0.04	0.04	0.02	-0.06	0.09	1.00							
LFBFL2	0.04	-0.02	0.01	0.11	-0.02	0.15	0.01	-0.02	0.02	-0.06	-0.08	0.00	0.06	0.003	-0.05	1.00						
KFLBF	-0.002	0.06	0.01	-0.08	-0.08	-0.03	0.01	-0.03	0.04	0.05	0.21	0.06	0.01	0.06	-0.05	-0.03	1.00					
AFM	-0.01	-0.03	0.09	0.07	0.05	-0.15	-0.08	0.09	-0.02	0.13	0.12	0.01	-0.15	0.004	0.23	0.02	-0.02	1.00				
NMC	0.03	0.06	0.13	-0.04	-0.09	-0.03	0.08	0.26	0.02	0.32	0.08	0.08	0.01	-0.05	0.06	-0.02	-0.01	0.14	1.00			
TRCH2	-0.02	-0.07	-0.03	-0.12	-0.09	-0.08	-0.06	-0.07	0.02	0.04	0.09	0.07	-0.03	0.01	0.01	-0.01	0.08	0.05	-0.005	1.00		
CSLH	0.02	0.01	0.06	-0.13	-0.03	-0.04	0.02	0.003	0.10	0.11	0.21	-0.03	-0.003	0.01	-0.06	-0.13	-0.02	0.00	0.13	0.08	1.00	
TLU	0.18	0.05	0.20	-0.13	-0.08	-0.12	0.13	0.03	0.07	-0.06	0.14	0.04	0.17	-0.01	-0.01	-0.07	0.06	-0.02	0.22	-0.04	0.27	1.00
SESS	0.12	-0.06	0.35	-0.11	-0.07	-0.07	0.05	-0.06	0.06	-0.02	0.09	-0.06	0.11	0.02	0.06	-0.07	-0.01	0.01	0.08	-0.01	0.32	0.42

A P P E N D I X - I I

Number of Children Ever Born and Number of Women by Five Years Age Group of Women Cheha and Ezha -and- Wolene, 1993

Age Group	Children Ever Born	Number of Women
15 - 19	12	19
20 - 24	125	73
25 - 29	396	133
30 - 34	618	138
35 - 39	854	157
40 - 44	560	93
45 - 49	474	68
Total	3040	681

Source: Own Survey.

DECLARATION

I, the undersigned, declare that this thesis is my work and that all sources of material used for the thesis have been duly acknowledged.

Name: Menbere Zenebe

Signature: 

Place and Date of Sumbission