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**ADDIS ABABA UNIVERSITY
SCHOOL OF GRADUATE STUDIES**

LEVEL AND DETERMINANTS OF CHILD LABOR
THE CASE OF SOUTHERN NATIONS, NATIONALITIES AND PEOPLES' REGION

DOCUMENTATION CENTRE
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**A Thesis presented to the School of Graduate Studies
Addis Ababa University
In partial Fulfillment of the
Requirements for the
Degree of Master of Science in Demography**

**By
SEYOUM TADESSE**

June, 2001

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*Level and Determinants of Child Labor:
The Case of Southern Nations, Nationalities and People's Region*

BY
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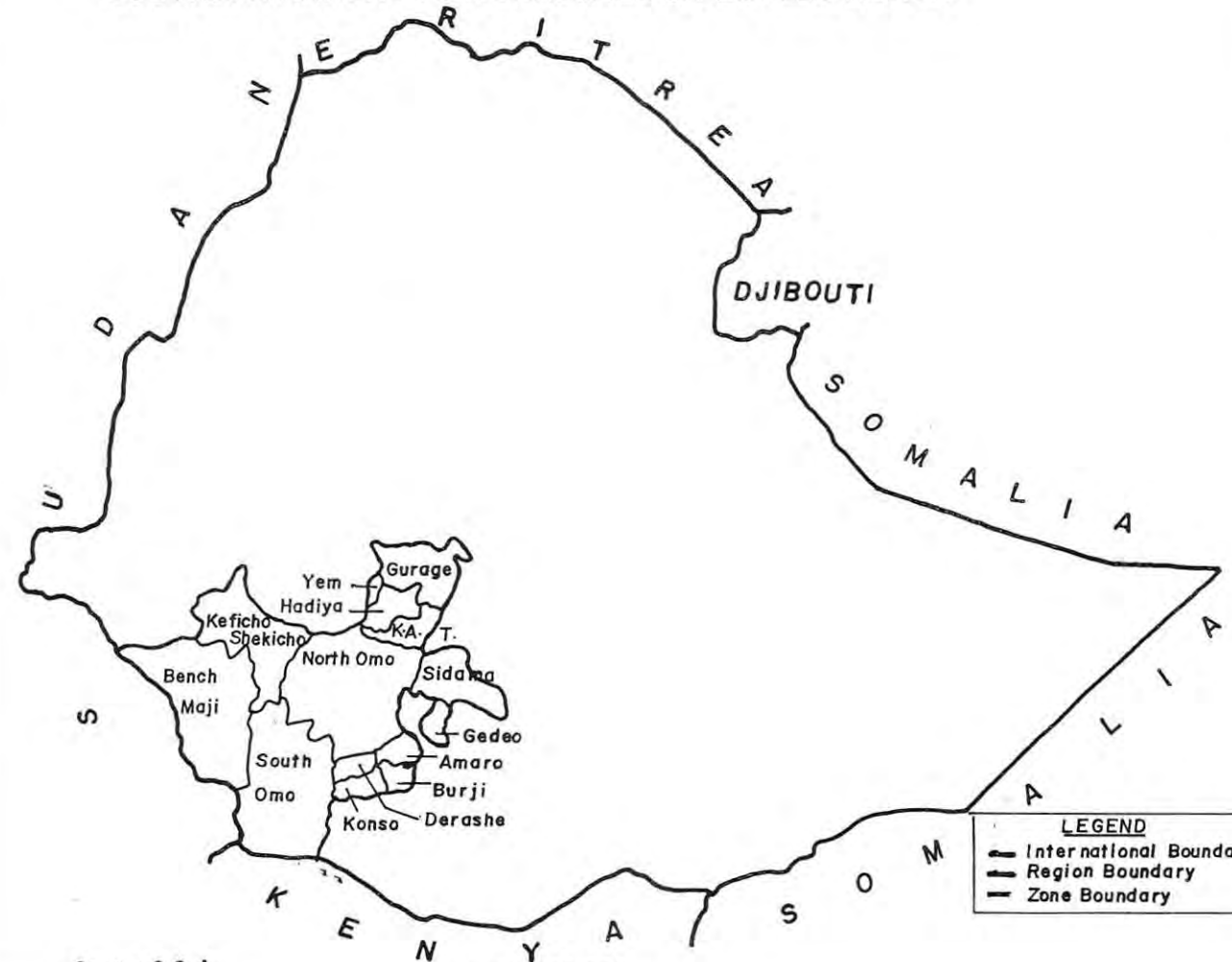
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LOCATION MAP OF
SOUTHERN NATIONS NATIONALITIES & PEOPLES' REGION



Source: C.S.A

Scale 1:8,000,000

LEGEND

- International Boundary
- Region Boundary
- Zone Boundary

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DEDICATION

Dedicated to my family and my beloved friend Fantaye Gutema

For

Their encouragement and love

ABRIVATIONS

CSA	Central Statistical Authority
CYAO	Children and Youth Affairs Organization
DTRC	Demographic Training and Research Center
EA	Enumeration Area
EAMAT	East African Multidisciplinary Advisory Team
ILO	International Labor Organization
IMPS	Integrated Microcomputer Processing System
IPEC	International Program for the Elimination of Child Labor
ISCO	International Standard Classification of Occupations
NGO	Non-governmental Organization
PSTC	Population Study and Training Center
SAMAT	South African Multidisciplinary Advisor Team
SNNPR	Southern Nations Nationalities and Peoples' Region
SPSS	Statistical Package for Social Science
TFR	Total Fertility Rate
UNESCO	United Nation Educational, Scientific and Cultural Organization
UNICEF	United Nations Children's Funds

TABLE OF CONTENT

	Page No.
Acknowledgment	i
Dedication	ii
List of abbreviation	iii
Table of contents	iv
List of Tables	vi
List of Figures	vii
List of Annexes	vii
Abstract	viii
CHAPTER ONE	1
I. INTRODUCTION	1
1.1 Background and Statement of the Problem.....	1
1.2 Operational definitions, International and National Laws	6 ✓
1.3 Objective of the study.....	10
1.4 Review of the related literatures.....	11
1.5 Conceptual frame work	27
1.6 Hypothesis to be tested.....	28
1.7 Organization of the paper	28
CHAPTER TWO	29
II. SOURCE OF DATA, STUDY AREA AND METHOD OF DATA ANALYSIS	29
2.1 Source of data and sampling procedure	29
2.2 Study area	31
2.3 Method of data analysis.....	33
2.4 Quality of data	36
2.5 Limitation of the data	39

CHAPTER THREE	40
III. BACKGROUND CHARACTERISTICS OF THE STUDY POPULATION.....	40
3.1 Description of selected Socio-demographic variables by work status of children	40
3.2 Level of Child labor.....	53
CHAPTER FOUR.....	57
IV. DETERMINANTS AND DIFFERENTIALS OF CHILD LABOR BY SELECTED DEMOGRAPHIC AND SOCIOECONOMIC VARIABLES	57
4.1 Bivariate analysis of child labor.....	57
4.2 Multivariate analysis of child labor.....	59
4.2.1 Sex of child and child labor	64
4.2.1 Age of child and child labor	65
4.2.3 Relationship to head and Child labor.....	66
4.2.4 Sex of the head of the household and Child Labor.....	67
4.2.5 Parental survivorship and Child Labor	69
4.2.6 Migration status of head and child labor	70
4.2.7 Household size and child labor	70
4.2.8 Place of residence and child labor	72
4.2.9 School attendance and child labor	73
4.2.10 Marital status of head and Child Labor.....	74
4.2.11 Educational level of head and child labor.....	75
4.2.12 Employment status of head and child labor.....	76
4.2.13 Occupation of head and child labor	78
CHAPTER FIVE	80
V. SUMMARY, CONCLUSION AND RECOMMENDATIONS.....	80
5.1 Summary and Conclusion	80
5.2 Policy relevant recommendations	85
REFERENCE.....	86
ANNEXES	89

LIST OF TABLES

	Page No.
Table 2.1 Myers' Blended index for SNNP, 1999	37
Table 3.1 Percentage distribution of selected socio-demographic variables by work status of children	44
Table 3.2 Percentage distribution of working children by the type of productive activity in which they are working	46
Table 3.3 Percentage distribution of work status of children by zones and special weredas	47
Table 3.4 Percentage distribution of previous education by work status	48
Table 3.5 Percentage distribution of children by reason for quitting school....	49
Table 3.6 Percentage distribution of type of productive activities by school attendance of Working children	50
Table 3.7 Percentage distribution of reasons for working by the number of working children	51
Table 3.8 Percentage distribution of age at which start working by the number of working children	52
Table 3.9 Percentage distribution of living arrangement by work status of children	53
Table 3.10 Population aged 5-14 by age, Sex, activity status and by level of activity rate in SNNP Region	54
Table 3.11 Population aged 5-14 by age, Sex, activity status and by level of activity rate in urban areas of SNNP Region.....	55
Table 3.12 Population aged 5-14 by Age, Sex, activity status and by level of activity rate in rural areas of SNNP Region.	56
Table 4.1 Chi-square significant test of association between each independent and the dependent variable.....	58
Table 4.2 Results of Logistic Regression in Model-I, II and III	62

LIST OF FIGURES

Figure 1.1 Conceptual framework	27
Figure 1.2 Graph of percentage distribution of sampled population by Sex and Age in Single year, Southern Nations Nationalities and peoples' Region	38
Figure 3.1 Graph of percentage distribution of working and not working Children by Zones and special weredas.....	47
Figure 3.2 Graph of percentage distribution of working children by age at which they start working.....	52

LIST OF ANNEXES

Annex 1 Categories of Variables Used in The Study	89
Annex 2 VIF Diagnosis of Multicollinearity test for Model-I, II and III.....	91
Annex 3 Classification Tables and Results of Logistic Regression Analysis for Model-I, II and III	92

ABSTRACT

The objectives of this study are to assess the level and differentials of child labor and to find out the main socioeconomic and demographic determinants of child labor in SNNP Region.

The source of data used in this study was the 1999 National Labor Force Survey conducted by the Central Statistical Authority (CSA).

The data were analyzed using descriptive and inferential techniques. Frequency distribution, that is, uni-variate analysis was used to see the percentage share among the background variables. Both the bi-variate test and multi-variate statistical models were also employed to see the association of the independent variable with the dependent and to find out the determinants and differentials of child labor among different socioeconomic and demographic variables.

The bi-variate technique using the chi-square test showed a strong association between the background variable and the dependent variable. The findings of the multi-variate logistic regression revealed that males were highly exposed to child labor as compared to their female counter parts and children aged 10-14 years are significantly exposed to child labor than in the age group 5-9. Furthermore, those children who were not attending school are much more expose to child labor than who were attending. Living in the rural areas showed a relatively higher risk for child labor than living in the urban areas. With respect to the migration status of head children with migrant head has a lower risk than with non-migrant head. Furthermore, households headed by Never Married members of the household and by females greatly push children into child labor. A child who is non-relative to the head is highly exposed to child labor. In addition to this children who lost one of their parents and those who lost both of them are more likely to be a child labor compared to the reference category. Household size is also directly related to child labor. It was also found that the educational status of the household head is inversely related to child labor. Employment status and occupation of the head also became significant. These results were also justified by employing a separate logistic regression model for demographic and socioeconomic variables and almost similar results were obtained.

Finally, recommendations for policy measures that should be taken by the government and the society at large were suggested to alleviate child laborer in the Region.

CHAPTER ONE
I. INTRODUCTION

1.1 BACKGROUND AND STATEMENT OF THE PROBLEM

One element of general concern in demographic labor force relationships is child labor, which remains widespread in many parts of the world. Available data have proved woefully inadequate to assess the extent or types of work done by children (ILO, 1984:35).

Child labor is almost invisible to most people, but child workers are largely available in the world. Sold or exchanged as cheap merchandise, many children cannot escape bounded labor or prostitution. Other suffers, and may only barely survive, the long hours of work, the heavy burdens, the dangerous tools, the poisonous chemicals. The strongest will go on, forever bearing the physical and emotional scars of premature labor. At a time when they should be at school and preparing for a productive adulthood, young boys and girls are losing their childhood and, with it, the promise of a better future. It is true that all over the world there is increasing awareness of this problem (ILO\IPEC, 1999:1).

Child Labor remains a serious problem in the world today. Earlier estimates based on very limited statistical information obtained from about 100 countries indicated that there were 73 million working children between the ages 10 and 14 years in Africa, Asia and Latin America in 1995. According to revised estimates by ILO's Bureau of Statistics, the number of working children in developing countries alone between the ages 5 and 14 is at least 120 Million who are fully at work. And more than twice as many or about 250 Million of them for whom work is a secondary activity are included. Of these, 61 per cent are found in Asia, 32 per cent in Africa and 7 per cent in Latin America. Although Asia has the largest number of child

workers, Africa has the highest incidence at around 40 per cent of children between 5 and 14 years old. Though primarily a developing country problem, child labor also exists in many industrialized countries and is emerging in many East European and Asian countries, which are in transition to a market economy (Valentina Forastieri, 1997:6).

Child Labor has emerged as an increasingly important and visible issue at the international level. In most developing countries, children are engaged in activities, which are often exploitative or hazardous that affect their education, health, mental and physical development (Assefa Bequele and Myer, 1995:32).

Numerous children work in occupations and industries, which are plainly dangerous and hazardous. They are found in mines, in factories making glass bangles, matches and fireworks, in deep sea fishing, in commercial agriculture and so on. According to one large-scale ILO national survey in the Philippines, more than 60 per cent of the working children are exposed to hazardous work and, of these, 40 per cent experience serious injuries or illness including amputations and loss of body parts (ILO, 1998:3).

Child labor is a complicated issue in a country like Ethiopia. As in many developing countries, in Africa, Asia and Latin America, child labor is a widespread problem in Ethiopia. Almost 50 per cent of Ethiopia's population are under 15 years of age. But it is young population that is diseased, malnourished and illiterate (ILO/EAMAT, 1996:5). According to the 1994 population and housing census of Ethiopia among 7.7 Million children between the age 10-14, 51.4 per cent are known to be economically active. As can be expected most child labor is in rural: 57.8 per cent as compared to 10.7 per cent in urban areas (CSA, 1999:118). In the same report referred above there are only about 25 pupils per 100-population aged 7-12

who were enrolled in primary schools. This ratio is observed to be lower compared to the rates for some developing African countries such as Niger (29 per cent) and Sudan (50 per cent) for 1990 (UNESCO, 1993 as cited in CSA, 1999:72). The gross enrollment ratio in junior secondary and senior secondary school were 21.75 and 11.29 per cent, respectively. This can be interpreted as about 22 pupils per 100 population aged 13-14 and about 11 pupils per 100 population aged 15-18 were enrolled in junior secondary and senior secondary schools, respectively (CSA, 1999:76). This suggests that a large number of Ethiopia's children may be in paid or unpaid work in one or another. Child labor, especially its worst form, poses a great challenge to development in Ethiopia. There is evidence showing that the worst forms of child labor have increased in the country. There are a growing number of street children in Addis Ababa and other urban centers and an increase in child prostitutes, a large number of them are also working in the informal sector and petty trade and small business. Many young girls are employed as domestic servants, working long hours for little or no pay and have no access to education. In rural areas children are also found working on plantations, where they are often exposed to pesticides and insecticides. All these activities hamper the future of children because their health, education and morals are seriously affected (Forum on Child Labor in Ethiopia, 2000:5).

The Amanuel Hospital, which is found in Addis Ababa, carried out a study, funded by ILO, on "Emotional problems in Child Domestic Labor in Addis Ketema District". They interviewed 1,000 children aged 5-15 years. Out of these 528 were child laborers and 427 were non-economically active. Child domestic housemaid accounted for 34 per cent, Street vendors for 57 per cent and private enterprise laborers for 9 per cent. On this total 56 per cent were females, 29 per cent of the laborers were 10 years and below. And the National Federation of Farm, Plantation, Fishery and Agro-industry Trade Union did a research to

assess the nature and extent of child labor in six Commercial Plantation and Farms (tea, Coffee, cotton, fruit). The survey showed that a total of 1,200 to 1,500 Child Laborers are engaged in these farm activities. And they reported that child labors represent about 30 per cent of the total working population in Commercial Plantation and Farms. Almost all children come from poor families and from single parents (ILO\EAMAT, 1999).

The issue of child labor is, without doubt, of great importance to Ethiopia. It has in the past attracted the attention of a number of donors, often through the non-governmental organization, which are engaged in numerous relief and integration activities. However, they tend to concentrate on street children in Addis Ababa only. The broader issue of children and employment remains largely unknown (ILO\EAMAT, 1996:II).

At the same time there is increasing awareness on the part of the government of the need to initiate action to combat child labor. Furthermore, the government of Ethiopia is giving priority to this subject through the prominent position given to the survival, development, and protection of children in national development plan; and its vision that no effective and sustained development can be achieved without optimum growth and development of Ethiopian children (Forum on Child labor in Ethiopia, 2000: 7).

Though exact figures are still unavailable, large number of children are also working in the informal and domestic sector of the economy. In Ethiopia there is no complete statistical information on the socioeconomic activities of children. In order to design programs and strategies that would help to alleviate the problems associated with the activities of children statistical data that reveal the type and magnitude of the activities of children, the character, distribution, causes and consequences are required. However, due to the shortcomings of the

survey methodology in providing appropriate data collection methodology child labor issue remain hidden statistically (CSA, 1999: 409).

The 1999, National Labor Force Survey has attached a section containing question on the socio-demographic characteristics and economic participation and some other related information on children aged 5-14 years. This survey was the first of its kind carried out by CSA. This paper tries to identify the level and causes of child labor in SNNP Region.

The Southern Nations, Nationalities and Peoples' Region (SNNP) is one of the eleven regions in Ethiopia. The peoples of this region are engaged more on the production of agricultural cash crop products such as coffee, "chat", sugarcane and other different types of fruits and cereals. Investors who engaged in coffee business in the Region need to have many child laborers for picking coffee in the coffee season. They want to hire children because child labor is cheaper than adult. At the coffee season many students move away from school and join the labor market in order to earn some money for their family and for themselves. And parents also make use of their children in preparing soils, fertilizing, cultivating the land, weeding, harvesting, etc. These are the types of work, which should be done by adults rather than by the children. According to the 1994, census of Ethiopia school attendance in Southern Nations, Nationalities and Peoples' Region is very low. More than three-quarter (77.2 per cent) of the population of SNNP Region had no formal education. The Net Enrollment Ratios in primary, junior secondary and in senior secondary school are 12.55, 3.56 and 3.19, respectively. These results are interpreted as among 100 children aged 7-12 about 13 of them attending primary education during the census enumeration. By the same token, among 100 children aged 13-14 and 15-18 about 4 and 3 were attending in junior secondary and senior secondary levels, respectively (CSA, 1998:74). This means that the majority of the children

in the Region didn't enroll to attend school. This might have contribution for the children to be involved in different economic activity. In the 1994 census it was also reported that among 1.5 million children aged 10-14 in SNNP Region, 34.2 per cent of them were economically active. Of which 10.9 per cent were in urban and 35.9 per cent were in the rural part of the region (CSA, 1998:108).

The 1994 census reported a Total Fertility Rate of 4.3 per woman for SNNP Region, which is among the highest next to Tigray, which has Total Fertility Rate of 5.4 per woman. This higher TFR might have a contribution to the prevalence of child labor in the region.

1.2 Operational definitions, International and National laws

a) "Child"

The term "Child" does not have a general accepted definition. According to concise Oxford Dictionary, the term "Child" means a young human being who has not reached the age of discretion, that is, the age at which one is fit to manage one's own affairs (7th edition, 1982). According to the Oxford Dictionary (1970) a child is a human being up to the age of puberty. The French Dictionary Robert, indicates that it means a human being from birth up to the age of thirteen; this is followed by adolescence. The age of puberty varies, depending on climate, race and individual. Longman Dictionary of contemporary English (1987) defines a child, as a young human being from the time of birth to the completion of bodily development. However, in the context of child labor, a working definition of a "child" may be a person below the age limit of 15 years, set by the Minimum Age Convention No. 138 (1973)(ILO, 1994:1).



b) “Work status”

In the 1999 National Labor Force Survey of Ethiopia work status of children was classified as not working, working in domestic activity and working in productive activity. This classification refers to the seven days prior to the interview and is based on the standard definition of productive activity. Children labeled as "working in domestic activity" are those who are engaged in domestic chores for their families without payment this include preparing food, cleaning the house, taking care of their little brothers and sisters or collecting fire wood for own consumption, etc., (CSA, 1999:91). In this study those who are working in domestic activity for their family without payment and those who are classified as the not working are lumped together to form the control or the not working group.

c) “Child Labor”

Child Labor is defined as, “Economically active populations under the age of 15, who are being exploited or over worked or deprived of their rights to health or education or just to childhood” (ILO, 1995).

For the purpose of this study, the definition of child labor is adopted from the 1999, National Labor Force Survey. According to this survey children who are engaged in the productive or economic activity are considered as a child laborer or as working children and those who were not participate in the economic activity are considered as the not-working. The sectors in which economically active children participated consist of household enterprise in agricultural sector, household enterprise in non agricultural sector, paid employment in agricultural sector, paid employment in non agricultural sector, paid domestic services and self-employment in any sector (CSA, 1999:411).

d) International Conventions on Minimum Age for Employment

The ILO's Minimum Age Convention (No. 138) and Minimum Age Recommendation (No. 146) of 1973 defined internationally accepted policy guidelines that set the minimum age for full-time employment at 15 years (ZEF, Ulrike Grote, Arnab Basu and Diana Weinhold, 1998:5).

Many international instruments have adopted fifteen years as the highest age limit for childhood. Minimum Age Convention No. 138 of 1973 also stipulates that the minimum age for admission to employment shall not be less than the age of completion of compulsory schooling and in any case shall not be less than 15 years (Radda Barnen, 1997:5 & 84). It should be noted that Convention No. 138 applies to work done by children both for another person (wage employment) and on their own behalf (self-employment) (ILO, 1994:23).

e) Provisions in the Ethiopian Labor Law:

The ILO convention No.138 requires states to set a minimum age for admission to employment and pursuant to this proclamation No.42 of 1993 of Ethiopia prescribes minimum age for employment in formal sector and conditions of the work for young workers. Thus, employing persons under fourteen years of age is prohibited. The labor proclamation No. 42/93 of Ethiopia stated that the minimum age for employment in private sector as a "worker" is fourteen years and as a "public" servant eighteen years. The labor proclamation (1993) also states that even a contract of apprenticeship could be conducted only with a person whose age is not less than fourteen years [Article 48(2)] (Radda Barnen, 1997: 11, 85 & 86).

f) Employee

A person who works for a public or private, NGOs or for government on contract or permanent, daily or weekly basis and receives remuneration in wages salary, commission, tips piece-rates or pay in kind.

g) Self-employee

A person who operates his or her own economic enterprise or engages independently in a profession or trade, and hires no employees.

h) Unpaid Family worker

A person who works without pay, in an economic enterprise operated by a related person living in the same household.

i) Employer

A person who operates his or her own economic enterprise or engages independently in a profession that employ at least one person is called employer.

j) Economic activity or productive activity

In the 1999 National Labor Force Survey, economic activity or production activity is defined as work which involves the production of goods and/or services for sale or exchange and production of certain products for own consumption (CSA, 1999:91).

k) Economically active population

Comprise all persons of either sex who furnish the supply of labor for the production of economic goods and services during the time reference period chosen for the investigation.

l) Economic activity rate

The extent of the participation of the population in economic activity is measured using the economic activity rate or economic participation rate. The economic activity rate is computed as the percentage of the economically active population over the total of the active plus the inactive population (CSA, 1999:94)

m) Household

A household denotes a group of persons who often live in the same housing unit or in connected premises and have common arrangements for cooking and eating their food. A household could consists of a single person, but usually, it consists of a husband, his wife, their children, relatives, etc (CSA, 1997).

n) Enumeration Area (EA)

An enumeration area is a unit of land delineated for the purpose of enumeration of housing units and population without omission and duplication. For the purpose of 1994 population and Housing Census, an EA in rural areas usually consists of 150-200 households and on the other hand and EA in urban centers constitutes 150-200 housing units. During the census/survey an EA is usually assigned to an enumerator the EAs delineated for the purpose of census were used in the 1999, National Labor Force Survey (CSA, 1997).

1.3 OBJECTIVE OF THE STUDY

General objective

The general objective of this study is to examine the level and to find out the various possible causes or factors and their contribution for the prevalence of child labor.

Specific objectives:

- 1 To assess the level and differentials of child labor in SNNP Region.
- 2 To find out the main socioeconomic and demographic determinants of child labor in SNNP Region.

1.4 REVIEW OF THE RELATED LITERATURES

The idea that the place of children is in the school and not in the workplace developed about 150 years ago. Child labor only began to be seriously questioned when industrialization and urbanization fundamentally changed children's working relationship and multiplied the dangers (Fyte Alec and Jankanish Michele, 1997: 1).

The issue of child labor is one of the glaring problems of our present society by which thousands of children have been victimized. It has to be kept in mind that what makes child labor exploitative is the type of work they engage in and the hostile environment in which they are forced to work. It is common practice, especially in large towns to see quite a large number of children engaged in street trades for lack of alternative means of survival (Rialp Victoria, 1993: 2).

Historically, legal intervention has been the major means of combating child labor. In many countries, effective enforcement of legislation has virtually eliminated child employment in the formal sector. However, as child employment in one occupation is brought to an end, so it emerges in another. Most children work in very informal contexts, in small-unregistered concerns, in private homes or sometimes even in illegal enterprises (Goonesekere, 1993:5). Even though there are international standards, national laws and regulations against child labor the practice continues to exist and hundreds of million of the world's children participate in non-schooling work, much of it under hardship or hazardous conditions which are detrimental to the health, education and normal development of the children themselves (ILO, 1996).

Child labor deprives children of their basic right to education. This is against the basic principles that childhood should be a time of development and education and should not be meant for work, child labor stunts children's psychological, social and intellectual development. It impedes the development of children's problem solving skill limiting their potential for productive life. There is impairment of both physical and psychological at a critical stage of life, often with permanent consequences. Lack of education condemns children to the worst employment prospects and in turn, the sheer pressure of survival will push children into the army of low wage earners (Kebebew Ashagre and Nelien Haspels, 1995: 23).

The proportion of working children increases and school attendance level fell sharply as the distance between a school and village increased. Children have to leave home very early in the morning and back late at night. They often have to walk several kilometers or take a bus in difficult climatic conditions (heat, rain, wind or snow), often without eating before they leave and without having a regular midday meal (Destins voiles, film by Serge Moati as cited in ILO, AECL, 1994: 16).

The number and proportion of children affected are not the only indicators to be taken into account when looking at child labor. Other extremely important indicators are the types of work given to children, the conditions in which they perform it and the risks or abuse to which these children are exposed in their employment. Official statistics contain very limited data in this area. The other sources of information available come from non-official studies and reports of varying quality and objectivity. There is no much information about the working conditions of the far large number of children employed in agriculture and domestic services (ILO, 1996: 6).

Depending on the sector in which they work and the trade they exercise working children may have face only one or two hazardous related to the working environment, or to nearly all types of hazard. Children are susceptible to all the dangers that adults face when put in the same situation. Children of course differ from adult workers in that they are still in the process of growing up and their normal development can be severely endangered by conditions that may not appear to constitute a danger to adults. Work hazards that affect adults affect children even more. In addition to the danger that is inherent to work, children have to face long hours of work, the absence of hygiene and rest facilities, malnutrition and a harsh climate. When speaking of children, therefore, it is necessary to go beyond the relatively limited concept of work hazard as applied to adults to include the development aspects of childhood. In the case of child labor the concept of work hazard needs to be child centered focusing not only on factors of immediate jeopardy, but also those that endanger physical and psychological development over the long term (Valentina Forastieri, 1997: 10).

The environment in which children work plays a significant role especially, in urban settings, children work on the street can be exposed to car accidents, robbery (being snatched by gangsters) and similar damages. One more environmental factor that needs to be given attention is that children while working on the street are exposed to various types of harmful practice such as smoking cigarettes, drug abuse, sexual seduction (being attracted by pornographic films magazines, etc.) development of street culture and other hazards. One of the damaging effects of child labor is that the children work without rest while at the same time they do not get enough or appropriate food. Some carry heavy goods, not because they have the capacity but because they don't want to let the working opportunity slip away. This can result in physical deterioration, weakness and serious health hazards. Besides too much work some children stay out of home for a long time, travelling here and there so as to get as much of their items sold as possible. Thus they stay on the street late at night during which

they go around bars and hotel to find customers. It is obvious that they come across drunkards, the condition of which exposes them to various hazards such as rape and robbery. The effect is serious especially for girl child workers, for it leads to unwanted pregnancy and related problems.

In Philippines it is estimated that there are over 100,000 children engaged in vending and the provision of service on the streets nation wide, with some 75,000 in Metro Manila alone, and that they constitute about 3 per cent of the child and youth population of major urban centers. They are to be found at busy crossroads and in markets and bus stations, selling cigarettes, sweets, newspapers, or flowers, shining shoes, guarding parked cars, or scavenging for recyclable refuse (Rialp Victoria, 1993: 3).

ILO conducted a thorough investigation on the availability and quality of statistical data relating to working children in more than 200 countries and territories, and evaluated their data collection methods and their related aspects. The findings showed that such data did not exist in the majority of the countries, and that much of the official statistics available in a few of the others were deficient in many ways. The main reason for the deficiency and in many cases, the complete absence of the statistics on child labor has been the lack of appropriate survey methodology, as well as clear concepts, definitions and classifications of factors and variables relating to child labor. In the absence of adequate data, therefore, many important aspects of the phenomenon still remain unknown, including its magnitude, nature and determining and causal factors in the different countries and globally (ILO/IPEC, 1999: 3).

There are multiple causes responsible for the existence of child labor. However the most important is the poverty of the parents who in order to survive are forced to send their children to work. Other factors include the low level of education of the parents, limited

education opportunities for children and inadequate development of public awareness about the seriousness of the problem. The socioeconomic and demographic factors are going to be explained below.

1.4.1 Socioeconomic Factors:

i) Economic characteristics of the head of the household and child labor

The economic characteristics such as employment status (i.e. employee, employer, self-employed, unpaid family worker, etc.) and occupation of the head of the household are considered to be important variables in determining child labor. Child labor is rooted in poverty. It is often a response by the household to the need to satisfy basic requirement. Children with unemployed parents or children whose parents do not have social security must work to help in family's struggle for survival. The survey conducted in Philippines showed that child work corresponds closely to the father's employment status. The incidence of child labor among families in which the father has regular employment is much lower than among those in which he is either in sporadic employment or is unemployed (ILO, 1988: 86). Furthermore, there are evidences in other countries like India they found that the number of households having at least one child laborer was highest among those households, which derived a major part of their income from casual labor and self-employed agricultural activities. The proportion of households with children working was highest among the self-employed households engaged in agricultural activities (Gujarat Institute of Development Research, 1993: 50). Also in Indonesia it was found that status of employment of the head of the household is a significant variable in determining child labor (Ed. Central Bureau of Statistics, 1993: 26). That is, the likelihood of working children tends to be higher if the head of the household is either self-employed, a temporary worker or employer with unpaid family workers.

ii) Educational level of the head of the household and child labor

Parents in Africa, like parents all over the world, are concerned with two things when it comes to their children: to give them the best they can and to equip them as well as possible to face the future; in other words, to educate them (ILO, 1993: 377). The educational status of the household head is also closely linked to whether the child work. The father's of most child workers in most study had generally low level of education and were therefore only able to obtain poorly paid jobs. As the principal breadwinner in the family, a father's educational attainment directly affects family income. A significant number of the fathers of the child workers had barely completed high school. On the other hand, the fathers of non-working children had attained a higher educational level and some were high school or college graduate (ILO, 1988: 86).

Child labor is expected to be highest among households in which the head of the household is illiterate. The proportion of child labor rose with level of illiteracy of the head of the household. The survey result in Senegal reported that the likelihood of working children declines with the increase in the educational level of the head of the household. Furthermore, in Indonesia it was revealed that educational level of the head of household is the most significant factor that determines child labor. In India it was found that educational background of the head of the household is likely to influence his/her activities of children. It is therefore, an important variable for a study of the activities of children (ILO/IPEC, 1996: 13-14).

iii) Marital status of the head of the household and child labor

There is sufficient evidence of relationship between the marital status of the head of the household and whether children work. In fact, in developing countries most children who are working have their parents in marriage. The main cause, which pushes children to work, is poverty but divorce is also one of the causes of children to work (ILO, 1993:373).

Breakdown in the traditional family structure through changing social structure increase the possibility of children being sent into domestic services many are sons and daughters of women who have been widowed, abandoned or for some other reasons are forced to raise the family without support (Maggie Black, 1997:13).

iv) Place of residence and child labor

Most developing countries base their economy on agriculture, therefore, in developing countries the proportion of working children are highest in rural area than in the urban. In Colombia in the rural part of the country children mainly carryout agricultural tasks on small family plots. However, the demand for child labor tends to increase during the harvest, when children either become independent wage earners or help their parents in the cultivation, plantation, weeding, harvesting crops, sale of commercial crops such as coffee, cotton and sugarcane in local market. In urban areas child workers are employed mainly in the service sector, including trading and personal services (ILO, 1988: 49).

The survey conducted in the four countries Ghana, Senegal, India and Indonesia revealed that on average, during the reference week the principal activity of more than one in every ten of the children in the age group 5-14 years was work as defined by the term "economic activity". Most of this work carried out in the rural areas and mainly by those children in the 10-14 year age group (ILO/IPEC, 1996: 9). In rural areas children involved in the work at early age.

v) School attendance and child labor

School attendance rate varies greatly from one country to the other. This may depend on the economy of the country, the number of schools available and distance from schools, etc. In most of the low-income countries, the net enrolment ratio is around 50 per cent and more than 85 per cent in higher income countries. It is very low in Ethiopia (28 per cent) but much higher in Kenya (90 per cent) and Cameroon (75 per cent). The low completion rates are observed in Ethiopia, Malawi and Nigeria. Conversely, relatively high percentages are observed in Ghana, Zimbabwe and Uganda. Higher income countries tend to have higher percentages in both enrolment and completion (UNICEF, 1994; World Bank, 1995; As cited in ILO, 1997: 8 Child labor in Commercial Agriculture in Africa). In Colombia, while most of the children in the survey had received some schooling, only few less than 6.2 per cent had completed their primary education and managed to attend a few years of secondary school (ILO, 1988: 56).

In Sri Lanka the 1981 census show that as many as 83.7 per cent of boys and 83.6 per cent of girls between the ages 5 and 14 were enrolled in schools in the early 1980s (Jayaweera, 1985 as cited in Goonesekere, 1993: 60). Research indicated that dropout rates are particularly high in poor communities, whether in urban or rural areas, and statistics also reveal a low participation rate in low-income communities for the age group 15 to 19 years. Poor children tend to drop out before completing the primary level because they are not well prepared for learning (Goonesekere, 1993: 61). Children who have never enrolled in a school, or who have given up attending, are potential child workers because almost all of them came from poor families. School dropouts make an army of potential worker and school statistics shows that this army is huge (ILO, 1993: 377).

Education has historically been one of the most effective instruments for eliminating child labor in practices. Education is a basic need and a basic right of all children. Where education is compulsory, and where attendance and enrolment are effectively enforced, children are no longer available for work, at least during school hours, and exploitation of child labor can be effectively reduced and even eliminated (ILO/IPEC, 1997: 24). It is evident that children in school are less likely to be in full time or close to full time employment or work. Conversely, children who are not obliged to attend school or who realistically do not have access to education have more chance to work. Of course, education is meaningless if adequate schools are not available or if because of cost or other practical difficulties, they are not accessible to poorer families. Thus by serious endeavor to attack the problem of child labor as a whole must include the commitment of sufficient resources to provide free and compulsory schooling to all children up to the age at which they become eligible to enter employment or work.

The survey conducted in Ghana, India, Indonesia and Senegal had revealed that a high proportion of child worker have either never attended school or subsequently dropped out. In India it was found that children who combined schooling and work constituted one-third of the child worker. More than one-tenth of children in rural areas who were attending schools was reported to be working. Furthermore, in Indonesia somewhat more than two out of every ten working children were also attending school (ILO/IPEC, 1996: xiv-xv).

vi) Household income and child labor

In order to formulate an action plan to eliminate child labor in developing countries, one needs to study the reasons for which children work. Working children were considered essential as contributors to the household economy. Children's work was considered essential to maintain the living standard of the household, either in the form of work for wages or in the form of help in household enterprise. Parents in particular considered that the work of their children was very important to augment the household income. About four-fifths of the parents in one survey said that the help of their children was essential to the functioning of the household enterprise, and nearly three-fifths felt their children's work was necessary to maintain the standard of living of the household. About one-third of the parents interviewed in that same survey felt that their children's work, especially around the household, was essential for the children to learn family responsibilities as part of the process of growing up, as well as, for experience in the world of work (ILO, 1988: 17).

In South Africa all those children doing economic activities for pay, profit or family economic gain were asked to indicate their main reasons for working. The most common reason given was that they felt that it was their duty to help the family. This main reason for working given by 59 per cent of children engaged in economic activities (ILO, 2000). In fact, in some countries, the cost of attending school is also one of the important reason which have to be considered. Parents have to pay for certain types of school equipment and sometimes registration fees. Clean clothes and often a uniform, the cost of accommodation and food in a family or in institution when they live far from the town as well as the cost of transport. In Kenya the cost of uniforms; books and school equipment can reach the equivalent of \$70 (ILO, world labor report, 1992/5: 15 as cited in ILO, 1994 Action for the Elimination of Child labor: 16).

Poverty is the most important reason why children work. Poor households need the money, which their children earn. Since by definition poor households spend the bulk of their income on food it is clear that the income provided by working children is critical to their survival. It cannot, however be said that poverty necessarily causes child labor. The picture varies; there are regions in poor countries where child labor is extensively practiced while in other equally poor regions it is not. Karala State in India for example though poor has virtually abolished child labor. At the international level again, countries may be equally poor and yet have relatively high or relatively low levels of child labor. But poverty is not the only cause culturally derived attitudes and values help to sustain child labor (ILO, 1998: 19).

Other supply factors affecting child labor are also important for understanding not only why child labor exists but also why children from certain families, areas and countries are more likely to be available for work. Certain areas and certain families have a tradition of children following in their parents' footsteps. If the family has a tradition of engaging in occupation such as leather tanning, there is a likelihood that the children will be caught up in the same process. The survey conducted in Ghana, India, Indonesia and Senegal reveals that for the most part the general determining factors leading to child labor are related to poverty, non-attendance in school and lack of school facilities near their homes and illiteracy. Other general factors, which play a role, have to do with age and sex of the children, and certain characteristics of the head of households (ILO/IPEC, 1996: 49).

1.4.2 Demographic Factors:

i) Sex of child and child labor

Sex of the child is one of the variables, which has to be considered when studying child labor. Most of the time girls are engaged in household activities than boys. On the other hand, boys are expected to help their fathers in farming, looking after animals, in shop keeping and also in producing income by working outside of home. In general more boys than girls were engaged in economic activities. However, if non-economic activities had been taken into account in the total numbers of working children, such as tasks of a domestic nature performed in the household of one's own parents on a full-time basis, then the girls would undoubtedly outnumber the boys (ILO/PECC, 1996: 21). In Colombia a very large number of girls are engaged in domestic service. In addition as many as one-fifth of the child workers in some cities were involved in manufacturing. The survey found that the incidence of working children aged 12-14 range between 4.7 and 12.3 per cent of the total workforce, the rates for boys being generally higher than those for girls (ILO, 1988: 50).

ii) Age of child and child labor

Young people below a certain age are either too young to be physically able to work or, due to national labor legislation or compulsory schooling, not allowed to work (ILO, 1990: 12). Almost all countries have enacted legislation prohibiting the employment of children below a certain age and where they are legally permitted to work (ILO, 1998: 33).

The minimum age limit adopted for measuring the economically active population in surveys varies among countries (ILO, 1986:12 as cited in survey of economically active population 1990). It may be as low as six (Egypt) or ten years (Brazil), or as high as 16 (Sweden, United

States). The majority of countries, however, use 14 or 15 years as the minimum age limit. The minimum age limit should be determined in accordance with the prevailing conditions in each country. Whatever minimum age limit is adopted, there may be in certain countries a substantial number of children below that age who are engaged in various economic activities. For instance, on plantations and in other agricultural undertakings producing for commercial purposes, or in family and small-scale enterprises producing for own or local consumption (ILO, 1990: 12-13).

Many children are put to work at a very early age in particular in the rural areas where they often begin to work as soon as they are 5 to 6 years old. Although the great majority of economically active children belong to 10 to 14 year age group the proportion of child workers under the age of 10 in the total is far from negligible; it may be up to 20 per cent in some countries. 14 per cent of child worker in Turkey and 20 per cent in Ghana and Senegal were under 10 years old. In Brazil a survey conducted in 1988 showed that 60 per cent of the persons questioned admitted having engaged in economic activity before reaching the age of 14 and 20 per cent before reaching the age of 10. In Morocco, a survey conducted by Moroccan League for the Protection of Children, with the collaboration of Ministry of Health. Among a sample of 450 children working as domestic employees in the main cities of the country shows that 27 per cent of these children were aged under 10 years and 73 per cent under 12 years (ILO, 1996: 6).

iii) Household size and child labor

Household size has a direct effect on its expenditure. Despite possible economies of scale, a large household has to spend more on food, clothing, education, etc. Household size is, therefore, an important variable likely to influence the extents of child labor. Poor households tend to have more children and family size is known to be a determinant of whether children work. Large family size has been statistically shown to be associated not only with the higher likelihood that children will work but also lower school attendance and completion. Some recent research pointed out that policies limiting, or gradually reducing, average family size can be expected to have a beneficial effect on reducing child labor and on improving school attendance (Fyte Alec, 1993: 9).

iv) Sex of the head of the household and child labor

The sex of the head of the household is an important variable, which have to be considered. The survey on child labor conducted in Indonesia in 1993, it was found that female-headed households are most likely to have working children, especially those with single female heads (Ed. Central Bureau of Statistics, 1993: 13).

v) Parental survivorship and child labor

Parental survivorship is an important variable in determining child labor. In the survey conducted in Senegal it was found that the tendency for children to work showed a strong relationship with parental survivorship, with more frequent child employment, both girls and boys, when the father is not alive (ILO/IPEC, 1996: 56).

vi) Migrations, population growth and the Demand for cheap labor

The other supply factors of child labor include high rate of population growth, increased migration from rural to urban areas, shortage or absence of essential services like health and education, social attitudes which accept child labor as one aspect of the socialization process and as the only means for the future prospective employment of the child. The demand factors include attitudes among employer towards children such as regarding them as cheap labor sources, disposable and easy to manipulate (CYAO& the Italian cooperation, 1996: 46).

1.5 Conceptual frame work

Socioeconomic and demographic factors are assumed to be the major determinants of child labor.

1.5.1 The dependent variable is work status of children (Working =1 , Not working=0)

1.5.2 The independent variables

1.5.2.1 Socioeconomic factors

Socioeconomic factors such as employment status of head, occupation of head, educational level, marital status of the head of the household, place of residence and school attendance of children are considered to be important variables in determining child labor. The educational level of the head of the household is an important factor in influencing child labor. As educated parents want to have fewer and better quality of children they do not want to push their children to be involved in work which is hazardous for the children. The place of residence also greatly influences child labor. Children who live in the rural area are expected to be involved more in child labor than who live in the urban. Therefore, place of residence is also one of the important variables which has to be taken into account in this section.

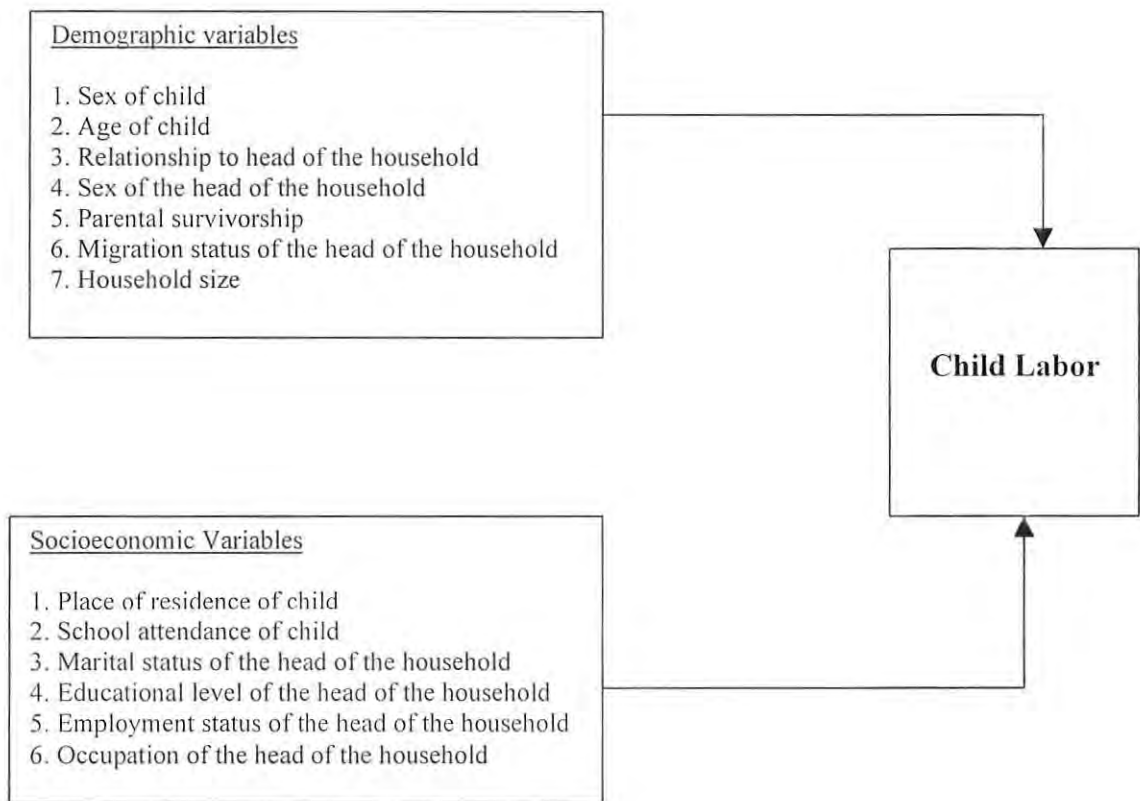
The economic characteristics such as, employment status (Labor Force Status) and occupation of the head of the household are important variables in determining child labor.

1.5.2.2 Demographic factors

Household size, ages of children, sex of children, sex of the head of the household, Parental survivorship, relationship to head and migration status are considered.

There is a positive association between household size and the probability that a child would be involved in child labor situation because as household size increases the ability to meet the basic needs of children would decline. Migration status of the head of the household is also one of the supply factors for child labor. Migrants are more likely than non-migrants to make their children work just to make ends meet.

Fig. 1.1: - CONCEPTUAL FRAME WORK



Source: - Developed by the author

1.6 Hypothesis to be tested

1. The likelihood of child labor is higher among male children as compared to female children.
2. Child labor is positively related with age of children.
3. Child labor is higher in rural areas than in the urban area.
4. Educational level of the head of the household has inverse relationship with the work status of the children.
5. The likelihood that a child will work increase with size of the household.
6. School attendance reduces the likelihood of that a child will participate in work.

1.7 Organization of the paper

This paper is organized in to five chapters. The first chapter presents introduction and statement of the problem. Which discussed about background and statement of the problem, operational definitions and international and national laws, objective of the study, review of literature, conceptual frame work and hypotheses. The second chapter deals with the data source and sampling procedure, the study area, method of data analysis, quality of the data and limitation of the data. Chapter three presents the description of work status of children by selected socio-demographic variables and about the level of child labor. The fourth chapter deals with the analysis of child labor using Bi-variate and Multivariate techniques to see the association of each independent variable with the dependent and to find out the variables, which determine child labor and to see the differential of child labor between demographic and socioeconomic variables. The last, or the fifth, chapter presents summary, conclusion and recommendations.

CHAPTER TWO

II. SOURCE OF DATA, STUDY AREA AND METHOD OF DATA ANALYSIS

2.1 Source of Data and Sampling Procedure

The source of data for this study is The National Labour Force Survey conducted by the Central Statistical Authority (CSA) of the government of Ethiopia in March 1999. This survey was the first of its kind carried out by CSA. The survey was designed to provide statistical data on the size and characteristics of the employed, unemployed, underemployed and the non-active population of the country. In general, the data obtained from the survey is useful for policy makers, planners, researchers and other institutions and individuals engaged in the design and implementation of human resource development projects and programs.

The survey was mainly aimed at providing information on the economic characteristics of the population aged 10 years and over, that is their activity status, employment, unemployment and under employment situation. It has also covered detailed socio-demographic variables such as age, sex, literacy status, educational level, type and source of training as well as internal migration. In addition a separate section that deal with the participation of children aged 5-14 years in economic activity was attached to the main questionnaire. In this questionnaire school attendance, reason for quitting school, economic activities of children, reason for working, age when started to work, extent of occupational injuries, living arrangement, parental survivorship, etc., were asked for all children aged 5-14 years. Children engaged in productive activity were classified by type of activity. The type of activity is grouped into: household enterprise in agricultural sector, household enterprise in non-agricultural sector, paid employment in agricultural sector, paid employment in non-agricultural sector, paid domestic service and self-employment in any sector.

For the purpose of the survey, the population in the country was divided into urban and rural categories. In both categories stratified two-stage sample design was used to select the sample in which the primary sampling units were enumeration areas. Sample Enumeration Areas from each domain were selected using systematic probability proportion to size; size being number of households obtained from the 1994 population and housing census. During the survey a total of 595 Enumeration Areas (EAs) were selected from 9 zones and 5 special weredas of SNNP Region. Within each sample EAs; fresh list of households was prepared at the beginning of the survey's fieldwork for urban sites and at the beginning of the 1991 E.C. (Ethiopian Calendar) agricultural sample survey's fieldwork for rural sites. The survey questionnaire was administered to 35 systematically selected households within each of the sample EAs. The total number of enumeration areas covered in rural areas was 395 and that of urban was 200. The total number of households covered during the survey were 20,820 (13,823 households from rural and 6,997 households from urban).

Trained interviewers did the data collection from CSA. The data obtained from the above survey on economic activities of children are based on household units. It excludes street children (that is homeless children who do not live in a household dwelling units but live on the street) and others that have no permanent or fixed place of residence.

2.2 Study area

The Southern Nation Nationalities and Peoples' (SNNP) Region is located at the southern part of Ethiopia. The region has a land area of 117,506 square kilometers (DTRC and PSTC, as cited in Yared, 1998). It accounts for 10.4 per cent of Ethiopia's total land area. It is characterized by more than 45 indigenous ethnic groups with distinct languages, cultures and socioeconomic organizations. The Region has the greatest population density in all of Ethiopia with about 95 persons per square kilometer, varying significantly within zones from 2.3 persons per square kilometers in Selemago, South Omo to about 670 in Damot Gale, North Omo. Fifty-six per cent of the region is lowland 37 per cent midland and 7 per cent highland. This region consists of nine administrative zones, five special weredas and seventy-seven weredas. The rural part of region has 3,804 farmers' associations areas, while the urban part has 213 Kebele's in the 149 towns (CSA, 1998).

According to the 1994 Ethiopian population and housing census the population size of Southern Nations, Nationalities and Peoples' Region was 10,377,028 this number is the third from the eleventh region in the country. And the projected population size for the year 2000 is 12,515,599 of which 6,219,202 are males and 6,296,397 are females. And the projected number of children for the year 2000 aged 5-14 is 3,292,404 of which 1,658,185 are males and 1,634,219 are females (CSA, 1998:314).

Urban-rural distribution of the population of Southern Nations, Nationalities and Peoples' Region indicated that the overwhelming majority of the population is living in rural area. About 93.2 per cent of the population reside in rural part of the region. The remaining 6.8 per cent of the population are living in urban areas. In the region 50.2 per cent of males

and 36.9 per cent of females are single and 46.9 per cent and 52.3 per cent are currently married males and females, respectively.

According to the 1994 census report the Welaita group (including Welaita, Dorzzie, Gamo Goffa, Konta, Kulo and Mello) constituted the highest proportion (24.01 per cent) of the total population of the region. Sidama and Guragie stood second and third comprising 17.5 percent and 14.9 per cent, respectively. These are followed by Hadiya (including Hadiya and Mareko) with 8.8 per cent, Kembata (including Kembata, Alaba, Kebena and Timbaro) with 6.5 per cent Keffa (including keffa and Mocha) with 5.8 per cent, Gedeo with 4.4 per cent, Amara with 3.0 per cent and Oromo (including Oromo and Werji) with 2.0 per cent. The remaining 12.0 per cent is constituted by the rest of the ethnic groups.

Language is one of the major socio-cultural characteristics of a population. The highest proportion (23.65 per cent) of the population of SNNP Region use Welayitigna language as a mother tongue. Sidamaigna and Guragigna used by 17.9 per cent and 14.7 per cent of the population, are the second and third largest language spoken as a mother tongue. These are followed by Hadiyigna (8.8 per cent), Kematigna (6.6 per cent), Keffigna (5.7 per cent), Gedeogna (4.4 per cent), and Amarigna (4.2 Per cent). The remaining Ethiopian languages are used by about 14.0 per cent of the population.

Religion is another important socio-cultural characteristics of a population. The highest proportion (34.8 per cent) of residents of SNNP Region are Protestant Christians, next to Protestant are Orthodox Christians with 27.6 per cent and Muslims with 16.7 per cent. Followers of Traditional religion constitute significant proportion amounting 15.4 per cent of the total population. Catholics make up 3.0 per cent, and other religions constitute 2.5 per cent of the population.

According to the 1994 census report more than three quarter (77.2 per cent) of the population of SNNP Region had no formal education. Among the population aged ten years and over 4,388,760 or 62.3 per cent were reported to be economically active and 2,644,901 or 37.6 per cent economically inactive.

2.3 Method of data analysis

The 1999 National Labor Force Survey permits the analysis of the level and determinates of child labor in relation to a wide range of background variables. First, the original data file is converted into a flat file format using the IMPS package. Then this flat file is converted in to SPSS package since the Analysis is going to be done by using this package.

To analyze the data a univariate statistical method will be employed to describe the background characteristics of the respondent population, the bivariate techniques is going be used to assess the association of each explanatory variable with the dependent variable. Statistical significance will be investigated using chi-square test that is to test the association between the different variables of interest. And to select the variables, which determine child labor, and to see the differential of child labor between demographic and socioeconomic variables multivariate analysis will be applied. Among the multivariate techniques the logistic regression method will be used. The model assumes that each one in the group has some probability of success on a given independent variable. In the analysis the dependent variable is a dichotomy denoting whether a child involved in working category or not.

The logistic regression can be expressed as:

$$\ln(P_i/1-P_i) = \beta_0 + \beta_1 X_{i1} + \beta_2 X_{i2} + \dots + \beta_k X_{ik}$$

And the corresponding multiplicative model for the odds is

$$P_i/(1-P_i) = e^{\beta_0} e^{\beta_1 X_{i1}} e^{\beta_2 X_{i2}} e^{\beta_3 X_{i3}} \dots e^{\beta_k X_{ik}}$$

Where:

P_i = Chance of being in the working category.

$1-P_i$ = Chance of being out of the working category.

$\ln(P_i/1-P_i)$ = The log odds of being in the category of interest (that is a child being in the working category).

$P_i/(1-P_i)$ = The odds of being in the category of interest.

$X_{i1}, X_{i2}, X_{i3}, \dots, X_{ik}$ = A set of K independent variables.

β = Regression coefficient.

β_i is the factor by which the odds change when the i^{th} independent variable increases by one unit. If β_i is positive and greater than 1, which means the odds are increasing; if β_i is negative the factor will be less than 1, indicates the odds are decreasing. When β_i is 0, the factors equal 1, which leaves the odds unchanged (Hosmer, Jr. and Lemeshow, 1989).

In logistic regression $\text{Exp}(\beta)$ is the estimated multiplicative change in the odds for a unit increase in the predictor, controlling for the effect of others. The value of the relative odds ratio can be further expressed as a percentage change of the odds, (i.e. $\text{Exp}(\beta)-1$). The significant level of the regression coefficients will be determined by P-value and the analysis of the result will be presented in the form of odds ratios, (i.e. the ratio of the probability that the event will occur to the probability it will not).

The logistic regression is interpreted using odds ratio. The odds ratio sometimes refers to risk or chance of occurrence. The odds ratio is, therefore, obtained by the probability of event occurring to that of probability of event not occurring. The odds ratio of the reference category is one by definition. Such estimators are unbiased and efficient and therefore

technically superior to those of ordinary least squares. Ordinary Least Square (OLS) estimation with a binary dependent variable yields unbiased but inefficient estimators because of the heterosedasticity disturbance term (House, 1985).

The parameters in the logistic regression model represent the increment or decrement in the log odds for the category coded “one” as opposed to the reference category holding all factors constant.

Variables that are going to be used in the model are: -

The dependent variable is work status of children (**Working =1, Not Working = 0**).

The independent variables are: -

1. Sex of child.
2. Age of child.
3. Relationship to the head of the household.
4. Sex of the head of the household.
5. Parental survivorship.
6. Migration status of the head of the household.
7. Household size.
8. Place of residence of child.
9. School attendance of child.
10. Marital status of the head of the household.
11. Educational level of the head of the household.
12. Employment Status of the head of the household.
13. Occupation of the head of the household.

Please refer to Annex 1 to see the categories used in the above variables.

2.4 Quality of Data

Age is the most important variable for socioeconomic and demographic analysis. The quality of data on age is usually defective in most developing countries and Ethiopia is not an exception to it. Errors in the tabulated data on age usually arise from the following: errors of enumeration like coverage errors, failure to record ages, and miss reporting of age. This can occur either from the respondent or enumerator side. If there were a clustering of age ending in some digits and deficiencies of ages in others would result in diverting information to a certain age group. Errors in age heaping are therefore, directly affect the child labor analysis understudy.

Myers' (1940) proposed the ways for detecting digit preference in the reporting of single years of age. It considers the digit preference in each digit 0 to 9. The theoretical range of Myers' index is 0, representing no heaping, and 90 showing that all ages are reported at a single digit. In the reporting of age the usual tendency is to prefer certain digits, commonly zero and five (Shryock, 1976:115). The greater the amounts of this age heaping the lower the confidence in the quality of data.

In Myers' index the values less than 10 represent low digit preference, those with the values 10 to 20 represent a moderate level of digit preference, and those with values above 20 represent a high level of digit preference (Myers, 1940:395). Based on Myers' Blended method the following table is developed to show the magnitude of age heaping for the sample data on Child Labor in SNNP Region in 1999.

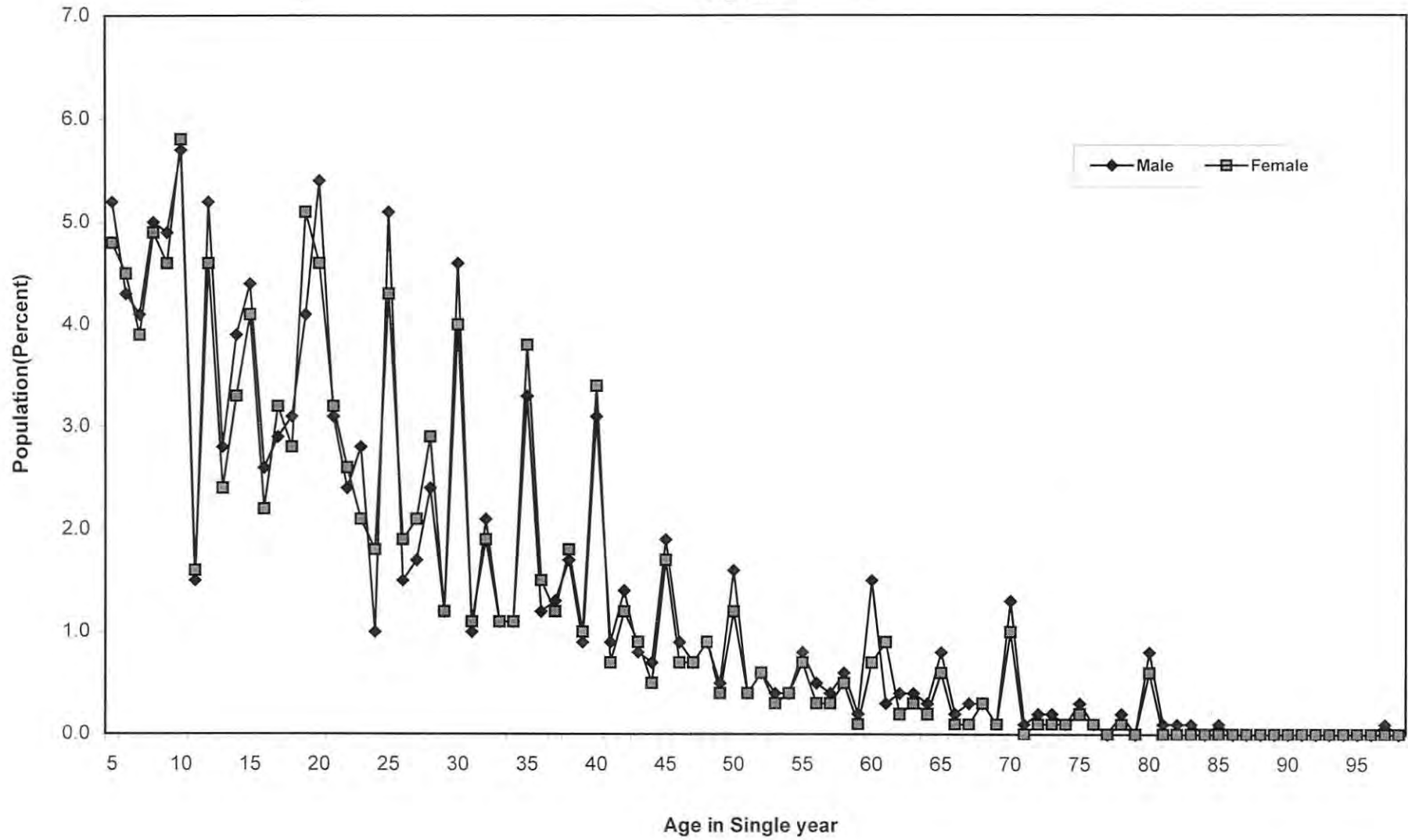
Table-2.1 Myers' Blended Index for SNNP Region, 1999.

Terminal digit (x)	From the 1999, National Labor Force Survey of SNNP		
	Deviation from 10		
	Both sexes	Male	Female
0	5.8	5.5	5.9
1	-3.5	-3.5	-3.4
2	-2.1	-2.5	-1.8
3	-0.8	-0.8	-0.9
4	-0.7	-0.7	-0.7
5	4.0	4.2	3.9
6	-2.2	-2.3	-2.4
7	-2.1	-2.1	-2.3
8	1.7	1.4	1.9
9	-4.1	-4.4	-3.9
*Total	27.0	27.4	27.1
**Preference index	13.5	13.7	13.6

Source: - Computed by the author based on the 1999, National Labor Force Survey of SNNP Region.
 Note: - *Total = Irrespective of sign, **Preference index = Total/2

The deviation from 10 per cent for digits from '0' to '9' and the preference index is given in Table-2.1. To see the quality of data, the per cent deviation from 10 and preference index of both sexes and for each sex separately for the sample population is presented in the above table. Age heaping was observed in the study area for both male and female showing that the most preferred digits are '0', '5' and '8'. Putting in order of preference '0' is the highest preferred digit followed by '5' and '8' and avoiding ages ending in the remaining digits (i.e., '1', '2', '3', '4', '6', '7', and '9'). '9' is the most avoided digit. The second most avoided digit is '1' followed by '6', '2' and '7'. On the other hand '4' is the least avoided digit by both male and female. In general, Myers' Blended index calculated for age data obtained from this survey indicated that there is a moderate level of digit preference.

Fig. 2.1 Percentage Distribution of Sampled population by Sex and Age in Single year, SNP Region



2.5 Limitation of the data

The data has the following limitations: -

1. The 1999, National Labor Force Survey did not collect income. The Authority believed that it is difficult to collect income from employment data in a situation where most people do not want to give information about their actual income or earnings. Furthermore, currently the techniques developed for measuring income from self-employment is very ambiguous.
2. The 1999, National Labor Force Survey is based on household units and excludes street children (i.e., homeless children who don't live in household dwelling units, but live on the street) and others who have no permanent or fixed place of residence.

CHAPTER THREE

III. BACKGROUND CHARACTERISTICS OF THE STUDY POPULATION

In this section the demographic and socioeconomic characteristics of the study population will be discussed. The univariate statistical technique is one way of analyzing the data. This technique attempts to describe the percentage distribution of selected socio-demographic variables by work status of children.

3.1 Description of selected Socio-demographic variables by work status of children

Table 3.1 shows the percentage distribution of work status of children by sex, age, relationship to the head, sex of head, parental survivorship, migration status of head, household size, place of residence of the child, school attendance of child, marital status of head, educational level of head, employment status of head and occupation of head.

In this study there are a total of 28, 965 cases of which 21,316 are not working (control group) and 7,649 are working children. The distribution of not working children by sex illustrated that among 21,316 not working children 10,006 (46.9 %) are males and 11,310 (53.1 %) are females. And from a total of 7,649 working children 4,835 (63.2 %) are males and 2,814 (36.8 %) are females. The number of male working children took the lion share of the working group.

The distribution by age in Table 3.1 also indicated that 14,298 (67.1%) and 7,018 (32.9%) children are found in the not working category in the age groups 5-9 and 10-14, respectively. Furthermore, as we could see from the table three-fourth of the working children that is 5,745 (75.1 %) are in the age group 10-14. The remaining 1,904 of them are in the other category, that is, 5-9 representing 24.9 per cent of the working group.

The summary of the relationship to the head of the household is given in the same table. From the table it could be seen that out of a total of 7,649 working children the majority of them are found in the first two categories. The category son or daughter of head and spouse represents 4,890 (63.9 %) and the category son or daughter of head or spouse represents 1,585 (20.7%). Moreover, there are also 324 (4.2 %) working children who are sister or brother to the head. Other relatives and non-relatives took 662 (8.7 %) and 188 (2.5 %) of the working children, respectively. This reveals that most of the working children are either son or daughter or sister /brother to the head.

Table 3.1 also illustrated the distribution of sex of head by working children. From this table we could observe that 80.5% (6,159) of the working children are in a household headed by male. The remaining 19.5% (1,490) belongs to female-headed household. It is true that most of the time in Ethiopia the household heads are males in fact when he die the head could be his wife or one of the elderly member of the household.

The parental survivorship by work status of children is also displayed in Table 3.1. According to the data in the table, The proportion of not working children whose mother and father alive is 86.2% (18,365). In addition to this those who lost either of their parents and those who lost both of them represent 12.4% (2,642) and 1.4% (309), respectively. Similar distribution is observed for working children too, the majority 6,247 (81.7 %) of working children has both their mother and father alive. The proportion of children who lost either mother or father constituted 16.8 per cent, while those who lost both parents make up only 1.6 per cent.

The distribution of working children by migration status of head is shown in the same table. There are 2,143 (28.0%) working children with migrant head and 5,506 (72.0%) with non-migrant head. This tells us that a significant number of working children belonged to non-migrant heads.

The frequency distribution of work status of children by household size is also presented in Table 3.1. As it could be seen from the table the majority of working children, that is, 3,240 (42.4%) and 3,166 (41.4%) are found in the categories 4-6 and 7-9, respectively. The remaining 548 (7.2%) and 695 (9.1%) are in the households with size 1-3 and 10 and above members.

Table 3.1 also depicts the distribution of children by place of residence. The majority of the working children, that is, more than three-quarter 6,567 (85.9 %) are living in rural areas while only 1,082 (14.1 %) are living in urban areas. This proved that children in the rural areas are more exposed to child labor than those who live in the urban areas.

It is obvious that school attendance will decrease the chance of working because those who are learning spent most of their time in the school. From the table we could observe that more than half, that is, 5,087 (66.5 %) of the working children did not attend school and only 2,562 (33.5 %) of them were working and attending school during the survey period. Out of a total of 21,316 not working children more than half, that is, 13,442 (63.1 %) of them did not attend school.

Table 3.1 presented the number of working children by marital status of head. In this table the majority, that is, 6,298 (82.3%) of the working children are belonged to heads who are married. 1,115 (14.6%) of working children who are with Div.\Wid.\Sep. heads followed this. The least number of working children, that is, 236 (3.1%) are found in a household with Never Married status.

The frequency distribution of educational level of head by working children is shown in Table 3.1. As we can see from the table almost three fourth (74.3%) of the working children are found in a household where the head is illiterate. This was followed by 16.5% (1,259) of working children whose heads are found in the category grade 1-6. Less than one percent of the working children have heads with educational level above grade 12. Therefore, this shows us that the educational level of head is an important factor in reducing child labor.

The frequency distribution of employment status of head by working children is given in the same table. The highest number of children, that is, 6,812 (89.1%) of them are with heads who are engaged in self-employ. The next category in which 397 (5.2%) of the working children found is labeled as others. This category is comprised of apprentice, member of co-operatives (agricultural/industrial), etc. The category employee followed this with 242 (3.2%) of the working children. From this we can understand that the majority of them are belonged to households in which the head engaged himself in irregular employment that is in self-employment, unpaid family worker, etc.

Occupation of head is one of the variables, which are going to be used in the study. As we could see more than three fourth, that is, 79.9 per cent of the working children are found in the households where the head is engaged in skilled agricultural activities. This is a clear indication that most of the working children are found in the rural areas.

Table 3.1: -Percentage distribution of selected socio-demographic variables by work status of children

Independent variable	Dependent variable Work status of children			
	Not Working	Col. %	working	Col. %
Sex of child				
Female	11310	53.1	2814	36.8
Male	10006	46.9	4835	63.2
Total	21316	100	7649	100
Age of child				
5-9	14298	67.1	1904	24.9
10-14	7018	32.9	5745	75.1
Total	21316	100	7649	100
Relationship to the head				
Son or daughter of head and spouse	14020	65.8	4890	63.9
Son or daughter of head or spouse	4261	20.0	1585	20.7
Sister or brother of head or spouse	620	2.9	324	4.2
Other relatives	2187	10.3	662	8.7
Non relatives	228	1.1	188	2.5
Total	21316	100	7649	100
Sex of head				
Male	17001	79.8	6159	80.5
Female	4315	20.2	1490	19.5
Total	21316	100	7649	100
Parental survivorship				
Mother and Father alive	18365	86.2	6247	81.7
Either of the two alive	2642	12.4	1283	16.8
Both dead	309	1.4	119	1.6
Total	21316	100	7649	100
Migration status of head				
Non-migrant	12405	58.2	5506	72.0
Migrant	8911	41.8	2143	28.0
Total	21316	100	7649	100
Household size				
1-3	1419	6.7	548	7.2
4-6	9605	45.1	3240	42.4
7-9	8315	39.0	3166	41.4
10 and above	1977	9.3	695	9.1
Total	21316	100	7649	100

Table 3.1 continued

Independent variable	Dependent variable Work status of children			
	Not Working	Col. %	working	Col. %
Place of residence of child				
Urban	7536	35.4	1082	14.1
Rural	13780	64.6	6567	85.9
Total	21316	100	7649	100
School attendance of child				
Attending	7874	36.9	2562	33.5
Not-attending	13442	63.1	5087	66.5
Total	21316	100	7649	100
Marital status of head				
Married	17946	84.2	6298	82.3
Div.\Wid.\Sep.	2955	13.9	1115	14.6
Never Married	415	1.9	236	3.1
Total	21316	100	7649	100
Educational status of head				
Illiterate	12786	60.0	5687	74.3
Non-regular	643	3.0	181	2.4
Grade 1-6	4440	20.8	1259	16.5
Grade 7-9	1165	5.5	267	3.5
Grade 10-12	1308	6.1	193	2.5
Above 12	974	4.6	62	0.8
Total	21316	100	7649	100
Employment status of head				
Employee	2491	11.7	242	3.2
Self-employ	16679	78.2	6812	89.1
Unpaid family worker	196	0.9	123	1.6
Employer	191	0.9	75	1.0
Others	1759	8.3	397	5.2
Total	21316	100	7649	100
Occupation of head				
Legislator, senior officials and managers	280	1.3	20	0.3
Professionals	176	0.8	6	0.1
Technicians and Associate professionals	878	4.1	72	0.9
Clerks	294	1.4	35	0.5
Service, shop and market sales workers	1703	8.0	268	3.5
Skilled agricultural and fishery	13042	61.2	6110	79.9
Crafts and related trades	1835	8.6	356	4.7
Plants, machine operators & Assemblers	155	0.7	15	0.2
Elementary occupation	2953	13.9	767	10.0
Total	21316	100	7649	100

Source: - Computed by the author based on the 1999, National Labor Force Survey of SNNP Region.

We turn now to a break down of children by type of productive activity. Table 3.2 presents the types of productive activity children were engaged in during the survey reference period. The data in the table revealed that the majority of working children that is 6,607 (86.4 %) of them were participated in household agricultural activity. The next productive activity in which working children participated most is in household non-agricultural activity with 592 (7.7%) of them working in it. The self-employment category is the third among the group in which 267 (3.5%) of the working children were engaged in it. The other categories such as paid employment agricultural, paid employment non-agricultural and paid domestic services each represent less than 1 per cent of the working group.

Table 3.2: - Percentage distribution of working children by the type of productive activity in which they are working

Type of productive activity	No. of working children	Col. %
For household enterprise agricultural	6607	86.4
For household enterprise non agricultural	592	7.7
Paid employment Agricultural	56	0.7
Paid employment non Agricultural	59	0.8
Paid domestic services	68	0.9
Self employment	267	3.5
Total	7649	100%

Source: - Computed by the author based on the 1999, National Labor Force Survey of SNNP Region.

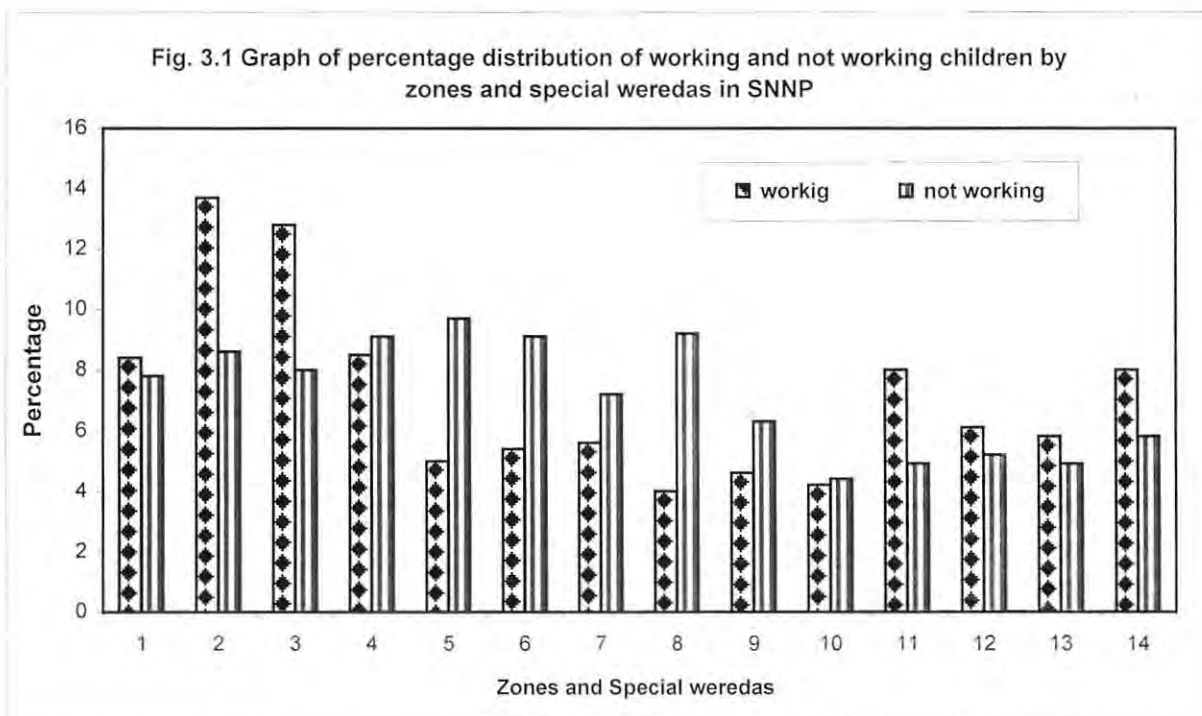
The distribution of children by zones and special weredas is also tabulated in Table 3.3. As we can see from the table the sampled children are taken from nine zones and five special weredas. The distribution of working children by zone shows that 1,048 (13.7 %) and 979 (12.8 %) of the working children are found in Hadiya and Kembata Alabana Tembaro zones, respectively. The other zones and special weredas represent less than 10 per cent each. Fig. 3.1 also helps us to understand the distribution easily.

Table 3.3:- Percentage distribution of work status of children by zones and special Weredas

Zones and Special weredas	Work status of children				Total	
	No. Not working	Col.%	No. working	Col.%	Total	Col.%
Zone-1 (Guragie)	1666	7.8	641	8.4	2307	8.1
Zone-2 (Hadiya)	1843	8.6	1048	13.7	2891	10.0
Zone-3 (Kembata, Al., & Tem.)	1705	8.0	979	12.8	2684	9.3
Zone-4 (Sidama)	1933	9.1	649	8.5	2582	8.9
Zone-5 (Gedeo)	2061	9.6	381	5.0	2442	8.4
Zone-6 (North Omo)	1932	9.1	412	5.4	2344	8.1
Zone-7 (South Omo)	1525	7.2	427	5.6	1952	6.7
Zone-8 (Kefecho Shekicho)	1965	9.1	308	4.0	2273	7.8
Zone-9 (Bench Maji)	1348	6.3	349	4.5	1697	5.9
Yeme special wereda (10)	933	4.4	325	4.2	1258	4.3
Amaro special wereda (11)	1036	4.9	613	8.0	1649	5.7
Burji special wereda (12)	1098	5.2	464	6.1	1562	5.4
Konso special wereda (13)	1045	4.9	440	5.8	1485	5.1
Derashi special wereda (14)	1226	5.8	613	8.0	1839	6.3
Total	21316	100.0	7649	100.0	28965	100.0

Source:- Computed by the author based on the 1999, National labor force survey of SNNP.

Note :- Al. & Tem. Means Alabana Tembaro



All children who were not attending school were asked whether they were ever attended school or not before the survey. The question "have you ever attended school before?" was asked to each of the children who were not attending school at the survey period. As we know from the previous discussion there are a total of 18,529 children who were not attending school. Of which 13,442 were not working and 5,087 were working. 12,891 (73.9%) from the not working and 4,564 (26.1%) from the working group reported that they never attended school. Furthermore, 266 (57.8%) from the not working and 194 (42.2%) from the working categories said that they were registered during the survey year but quitted to attend. The remaining 285 (46.4%) from the not working and 329 (53.6%) from the working categories responded that they were attending school before the survey year but can not continue because of different reasons. The majority of children who were not attending school during the survey year were never attended school in their life. This means that they are illiterate (see Table 3.4).

Table 3.4: - Percentage distribution of previous education for those children who were not attending school by work status of children

Previous educational status	Work status of children				
	No. Not Working	Row. %	No. Working	Row %	Row Total
Registered during the survey year	266	57.8	194	42.2	460
Attended school before the survey year	285	46.4	329	53.6	614
Never attended school	12891	73.9	4564	26.1	17455
Total	13442		5087		18529

Source: - computed by the author based on the 1999, National Labor Force Survey of SNNP Region.

In the survey, children aged 5-14 years who have been attending school before the survey year and children who have registered at the start of the current academic year but were not attending school currently are asked to report the reason for quitting school. The resulting data is presented in Table 3.5. From Table 3.4 we can observe that there are a total of 1,074

children who quitted attending school from both working and not working group. Of which 993 of them gave their own reasons why they stopped learning. While, 81 (7.54 %) of them had no any response. According to the data in Table 3.5 illness 277 (25.79 %), lack of enough family income 210 (19.55 %), need to work 149 (13.87 %) and lack of personal interest 143 (13.31 %) are the four top reasons for quitting school given by children who did so. Each of the remaining reasons was reported by less than 5 per cent of the children.

Table 3.5: - Percentage distribution of children by reason for quitting school

Reasons for quitting school	No. of children who Quitted learning	Col. %
Illness	277	25.79
Lack of enough family income	210	19.55
Lack of peace in the family	16	1.49
Family disorganization (due to death, divorce, etc.)	25	2.33
Family transfer	21	1.96
School was too far	28	2.61
For work	149	13.87
Fail in school performance	45	4.19
Marriage	2	0.19
Lack of Family interest for education	42	3.91
Displacement due to war, drought	7	0.65
Lack of personal interest for education	143	13.31
Others	28	2.61
NR (no response)	81	7.54
Total	1074	100%

Source: - Computed by the author based on the 1999, National Labor Force Survey of SNNP Region.

The distribution of type of productive activities by school attendance among working children is given in Table 3.6. This table illustrates that a significant number of the working children, that is, 4,473 (87.92%) were participated in the household agricultural activity and they did not attend school. And there are also 2,134 (83.33%) of working children who were attending and working in the household agricultural activity. The next type of activity in which children involved more but not attending is in household non-agricultural activity which accounted for 316 (6.21%) of the children. Furthermore, there were 276 (10.78%)

children who were attending and working in the same activity mentioned above. The self-employment category consists of 150 (2.95%) and 117 (4.57%) children who were not attending and attending school, respectively.

Table 3.6: - Percentage distribution of type of productive activities by school attendance of working children

Type of productive activity	School attendance of working children			
	Number Not attending	Col. %	Number Attending	Col. %
Household-Enterprise-Agricultural	4473	87.92	2134	83.33
Household Enterprise-non Agricultural	316	6.21	276	10.78
Paid employee Agricultural	49	0.96	7	0.27
Paid employee non-Agricultural	39	0.77	20	0.78
Paid Domestic Service	60	1.20	8	0.31
Self employment	150	2.94	117	4.57
Total	5087	100%	2562	100%

Source: - computed by the author based on the 1999, National Labor Force Survey of SNNP Region.

The reason why children start working for the first time is very important to know what pushes them to child labor. Table 3.7 shows the number of working children by their reason of start working for the first time. More than three-fourth of the working children, that is, 6,550 (85.63%) of them responded that they start working for the first time just to help their family in farming. The next important reason is to help in family business which accounted for 543 (7.09%). This was followed by the reasons to be self-reliant which represents 359 (4.69%). Reasons like to augment household income and others took 88 (1.15%) and 83 (1.09%), respectively.

Table 3.7: - Percentage distribution of reasons for working by the number of working children

Reasons for working	Number of working children	Col. %
To help family in farming	6550	85.63
To help in family business	543	7.09
Augment household income	88	1.15
To be self reliance(Self helping)	359	4.69
Others	83	1.09
No response	26	0.34
Total	7649	100%

Source: - computed by the author based on the 1999, National Labor Force Survey of SNNP Region.

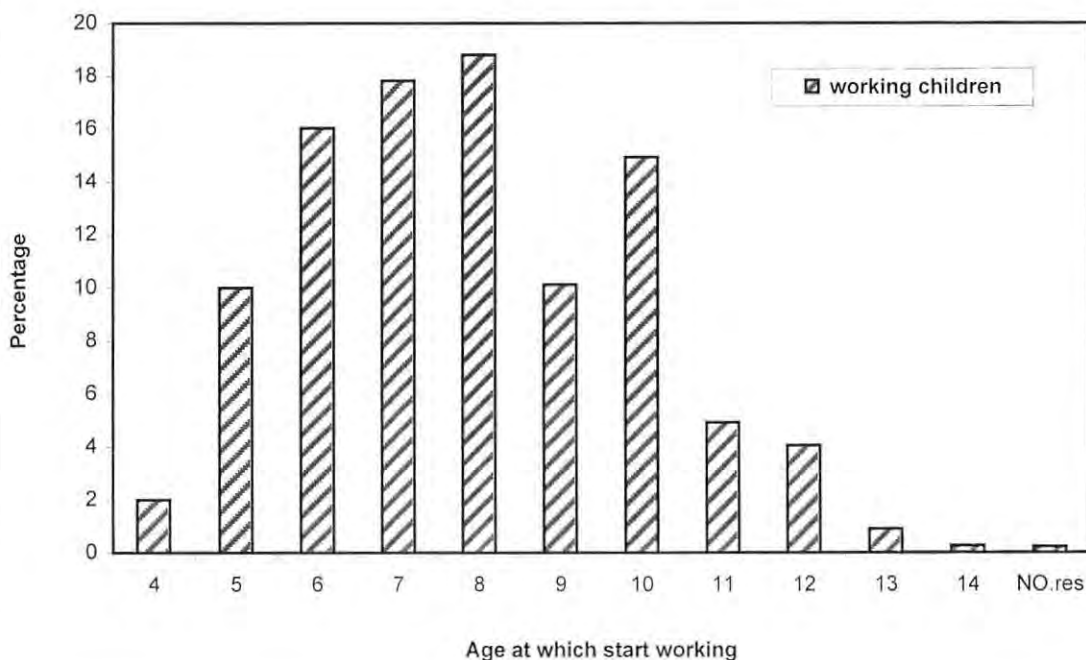
It is known that in the developing countries especially in the rural area children start to work at early ages. The age, at which children start working, is illustrated in Table 3.8. The proportion of working children who reported start working at each age 5, 6, 7, 8, 9 and 10 is ten per cent and more. The other ages represent less than 5 per cent of the working children. From the table we can understand that even some of the children started to work at age 4. Fig. 3.2 also presented the situation clearly.

Table 3.8:- Percentage distribution of age at which start working by the number of working children

Age at which start working	Number of working children	Col. %
4	152	1.99
5	765	10.00
6	1225	16.02
7	1363	17.82
8	1438	18.80
9	774	10.12
10	1141	14.91
11	376	4.92
12	310	4.05
13	69	0.90
14	19	0.25
No response	17	0.22
Total	7649	100

Source:- Computed by the author based on the 1999, National Labor Force Survey of SNNP.

Fig. 3.2 Graph of percentage distribution of working children by age at which they start working



In studying child labor it is useful to know with whom children are living. Living arrangement by work status is depicted in Table 3.9. From the table we could understand that more than half of the working children, that is, 5,137 (67.2%) of them are living with their mother and Father followed by those living with mother only 1,127 (14.7%) and those living with their relatives 815 (10.7%). The proportion of working children living with father only constitutes 5 per cent. The table also shows the proportion of working children living with other (Employer, Guardian, etc.) to be relatively low (2.5 per cent).

Table 3.9: - Percentage distribution of living arrangement by work status of children

Living arrangement	Work status of children			
	Not working	Col. %	Working	Col. %
With Mother and Father	14692	68.9	5137	67.2
With Father only	945	4.4	380	5.0
With Mother only	3028	14.2	1127	14.7
With other relatives	2390	11.2	815	10.7
Others (Employer, Guardian, etc.)	261	1.2	190	2.5
Total	21316	100%	7649	100%

Source: - Computed by the author based on the 1999, National Labor Force Survey of SNNP Region.

3.2 Level of Child Labor

Usually, the economic activity questions refer to those members of the households aged ten years and over. The minimum age was fixed at ten because it is presumed that most children start to participate in the production of economic goods and services beyond this age. However, in most developing countries because of the lower level of living standard, lower level of production, lower level of economic development etc., children below the age of ten are also participated in the production of economic goods and services. Consequently, the economic activity rate below the age of ten can not be negligible. The economic activity rate is defined as the percentage of the economically active children to the total number of children who are active and inactive.

3.2.1 The level of economic activity rate in SNNP Region

Here working children are labeled as active and not working as inactive. In fact it was defined in the operational definition part that those children who were economically active as working and those who were not participated in the economic activity as not working.

Table 3.10 depicted that the total activity rate for both sexes is 26.41 per cent. The activity rate for males is 32.58 per cent while that of females is 19.92 per cent. This result clearly revealed that male children participated in the production of economic goods and services more than females. The activity rates by age and sex are also shown in the same table. The total activity rate for both sexes in age groups 5-9 is 11.75 per cent of which the activity rate for males is 16.44 per cent while that of females is 6.98 per cent. Similarly, the total activity rate for both sexes in the age group 10-14 is 45.01 per cent the rate for males is 52.39 while that of females is 36.96 per cent. Again the activity rate for males in both age groups is greater than that of females.

Table 3.10: - Population aged 5-14 by age, sex, activity status and by level of activity rate in SNNP Region

Age group and sex	All persons	Activity status		Activity rate %
		Active	In-active	
All ages				
Total	28965	7649	21316	26.41
Male	14841	4835	10006	32.58
Female	14124	2814	11310	19.92
5-9				
Total	16202	1904	14298	11.75
Male	8177	1344	6833	16.44
Female	8025	560	7465	6.98
10-14				
Total	12763	5745	7018	45.01
Male	6664	3491	3173	52.39
Female	6099	2254	3845	36.96

Source: - Computed by the author based on the 1999, National Labor Force Survey of SNNP Region.

3.2.2 The level of economic activity rate for urban areas in SNNP Region

To understand the difference in activity rates between urban and rural areas of SNNP it is better to compute the rate separately. The activity rate for urban areas in SNNP is shown in Table 3.11. From this table it can be observed that the total activity rate is 12.56 per cent and the rates for males and females are 15.99 and 9.11 per cent, respectively. Here, the rate for males is greater than that of females. This tells us that males are economically more active than females in the urban areas.

If you look at the rates under age groups 5-9 and 10-14 in the same table you could see that there is a big difference between them. The total activity rate under age group 5-9 is 3.69 per cent the rate for males is 5.19 and that of females is 2.21 per cent. Similarly, the total activity rate for age group 10-14 is 21.79 per cent the rates for males and females are 27.0 and 16.45 per cent, respectively. Again in each age group the activity rate for males is greater than that of females (see Table 3.11).

Table 3.11: - Population aged 5-14 by age, sex, activity status and by level of activity rate in the urban areas of SNNP Region

Age group and sex	All persons	Activity status		Activity rate %
		Active	In-active	
All ages				
Total	8618	1082	7536	12.56
Male	4316	690	3626	15.99
Female	4302	392	3910	9.11
5-9				
Total	4396	162	4234	3.69
Male	2179	113	2066	5.19
Female	2217	49	2168	2.21
10-14				
Total	4222	920	3302	21.79
Male	2137	577	1560	27.00
Female	2085	343	1742	16.45

Source: - Computed by the author based on the 1999, National Labor Force Survey of SNNP Region.

3.2.3 The level of economic activity rate for rural areas in SNNP Region

Table 3.12 provides you the activity rate in rural areas of SNNP. When we compare the figures in this table to that of Table 3.11 we can easily understand that the activity rate for rural areas is greater than that of the urban areas. For instance, the total activity rate in urban areas for all ages is 12.56 (see Table 3.11) and that of rural is 32.28 per cent. Likewise the rates in the age groups 5-9 and 10-14 in the rural areas are much higher than the rates in the urban areas. This is a clear indication that children in the rural areas are more likely to be engaged in the economic activity or exposed to child labor than in the urban areas. In addition to this male children are more exposed to child labor than female whether they live in urban or rural areas.

Table 3.12: - Population aged 5-14 by age, sex, activity status and by level of activity rate in the rural areas of SNNP Region

Age group and sex	All persons	Activity status		Activity rate %
		Active	In-active	
All ages				
Total	20347	6567	13780	32.28
Male	10525	4145	6380	39.38
Female	9822	2422	7400	24.66
5-9				
Total	11806	1742	10064	14.76
Male	5998	1231	4767	20.52
Female	5808	511	5297	8.90
10-14				
Total	8541	4825	3716	56.49
Male	4527	2914	1613	64.37
Female	4014	1911	2103	47.61

Source: - Computed by the author based on the 1999, National Labor Force Survey of SNNP Region.

CHAPTER FOUR

IV. DETERMINANTS AND DIFERENTIALS OF CHILD LABOR BY SELECTED SOCIOECONOMIC AND DEMOGRAPHIC VARIABLES

4.1 Bi-variate Analysis of Child Labor

The above simple tabulations of work status by selected socio-demographic variables present the most straightforward way to gain insight from categorical response data. Moreover, the analysis and interpretation of such simple tabulations may produce misleading inferences because additional explanatory variables are not held constant. Therefore, there is a need to make use of the multivariate technique as well.

Before proceeding to the multivariate analysis it is necessary to test whether there is a significant association between the dependent and each of the independent variables. As the variables employed in this study are categorical the chi-square statistics is used to test the bivariate association between the dependent variable and each of the independent variables. The results of this test are shown in Table 4.1. In the table we have the observed and expected frequencies.

In this test, the interest is to see whether there is a significant association between each of the selected independent variable with the dependent variable. It shows only the strength of relationship between dependent and independent variables at a macro level. The result of the chi-square test is, therefore, displayed in Table 4.1.

From the result it could be observed that all the independent variables are strongly and significantly associated with the dependent variable at a significant level of $P < 0.01$ except the independent variable sex of the head of the household which became insignificant.

Table 4.1: - Chi-square Significant test of association between each independent and the dependent variable.

Independent variable	Dependent variable work status of children		Chi-square (χ^2) value
	Not working	working	
1. Sex of child Female Male	11310(10394) 10006(10922)	2814(3729.8) 4835(3919.2)	596.37*
2. Age of child 5-9 10-14	14298(11923) 7018(9392.6)	1904(4278.6) 5745(3370.4)	4064.09*
3. Relationship to the head Son or daughter of head and spouse Son or daughter of head or spouse Sister or brother of head or spouse Other relatives Non relatives	14020(13916) 4261(4302.2) 620(694.7) 2187(2096.6) 228(306.1)	4890(4993.7) 1585(1543.8) 324(249.3) 662(752.4) 188(109.9)	125.12*
4. Sex of the head Male Female	17001(17044) 4315(4272)	6159(6116) 1490(1533)	2.05
5. Parental survivorship Mother and Father alive Either of the two alive Both dead	18365(18113) 2642(2888.5) 309(315)	6247(6499.5) 1283(1036.5) 119(113)	93.41*
6. Migration status of head Non migrant Migrant	12405(58.2%) 8910(41.8%)	5506(72.0%) 2143(28.0%)	453.44*
7. Household size 1-3 4-6 7-9 10 and above	1419(1447.6) 9605(9452.9) 8315(8449.1) 1977(1966.4)	548(519.4) 3240(3392.1) 3166(3031.9) 695(705.6)	19.68*
8. Place of residence of child Urban Rural	7536(6342.2) 13780(14974)	1082(2275.8) 6567(5373.2)	1211.38*
9. School attendance of child Attending Not attending	7874(7680.1) 13442(13636)	2562(2755.9) 5087(4893.1)	28.98*
10. Marital status of head Married Div.\Wid.\Sep. Never married	17946(17842) 2955(2995.2) 415(479.1)	6298(6402.3) 1115(1074.8) 236(171.9)	36.81*

Table 4.1 (Continued)

11.Educational level of head			
illiterate	12786(13595)	5687(4878.3)	653.71*
Non-regular	643(606.4)	181(217.6)	
Grade 1-6	4440(4194)	1259(1505)	
Grade 7-8	1165(1053.8)	267(378.2)	
Grade 9-12	1308(1104.6)	193(396.4)	
Above 12	974(762.4)	62(273.6)	
12.Employment status of head			
Employee	2491(2011.3)	242(721.7)	609.98*
Self-employed	16679(17288)	6812(6203.4)	
Unpaid family worker	196(234.8)	123(84.2)	
Employer	191(195.8)	75(70.2)	
Others	1759(1586.6)	397(569.4)	
13.Occupation of head			
Legislator senior officials and managers	280(220.8)	20(79.2)	997.15*
Professionals	176(133.9)	6(48.1)	
Technicians & associate professionals	878(699.1)	72(250.9)	
Clerks	294(242.1)	35(86.9)	
Service, shop & Market sales workers	1703(1450.5)	268(520.5)	
Skilled agricultural and Fishery	13042(14094)	6110(5057.6)	
Crafts & Related Trades	1835(1612.4)	356(578.6)	
Plant,Machine operators & Assemblers	155(125.1)	15(44.9)	
Elementary occupation	2953(2737.6)	767(982.4)	

Source: - Computed by the author based on the 1999, National Labor Force Survey of SNNP Region.

Note: - Numbers under the bracket are expected frequencies.

* = Significant at $P < 0.01$

4.2 Multivariate Analysis

In the bivariate analysis we can only examine the presence of statistical association, that is, the degree to which an independent variable is associated with the dependent variable without controlling the effect of others. The observed association can be the result of a confounding effect caused by a third factor, called confounder. But the observed association can increase or decrease or disappear if a due account is taken to remove the effect of possible confounders. This can be easily employed in a multivariate analysis that examines the effect of more than one variable simultaneously.

The next step will be, therefore, to use an appropriate multivariate statistical technique to control for the effect of the set of explanatory variables while estimating the net effect of each independent variable separately. The form of the data affects the choice of statistical techniques to be employed. In this study work status of children can be used as dependent variable “y” collapsing responses into a dichotomy or dummy variable as working=1/not-working =0. Logistic regression is the appropriate model with dichotomous dependent variable, it yields unbiased and efficient estimators and requires fewer assumptions than least square methods (Hosmer, Jr. and Lemeshow, 1989).

Thus by applying logistic regression it is possible to test the model in which variables such as :- age of child, Sex of child, Relationship to the head of the household, Place of residence of child, Educational level of the head of the household, Migration status of head, Marital status of head, Employment status of head, Occupation of head of the household, Parental survivorship, sex of the head of the household, household size and school attendance of children are used as explanatory variables for the dependent variable work status of children.

The Variance Inflation Factor (VIF) measures the extent of multicollinearity in the regression model. Multicollinearity is prone if VIF is greater or equal to 5. The VIF in the multicollinearity test of the models indicated that all VIF values, presented in the Annex 2, are less than 5. Hence, there is no indication of multicollinearity in the models.

Three models are fitted using unweighted data to analyze child labor. Model-I is fitted using seven demographic variables such as sex of child, age of child, relationship to head, parental survivorship, sex of head, migration status of head and household size. Model-II is fitted using six socioeconomic variables, which include place of residence of child, school

attendance of child, educational level of head, marital status of head, employment status of head and occupation of head. Finally, Model-III is fitted for all of the thirteen variables. Models-I and II are fitted just to see the differentials of child labor between demographic and socioeconomic variables by comparing their results with the result of Model-III. There are a total of 28,965 cases among these 21,316 are not working (control group) and 7,649 are working. The logistic regression results in Model-I, II and III are shown in Table 4.2.

There are various ways to assess whether or not the model fits the data. One way to assess how the model fits is to compare the observed to the predicted outcomes. This table is called the classification table. The results in Model-I, II and III indicate that the models as working as well correctly predicted 4,152, 4,562 and 5,255, children who reported working, respectively. Similarly, the models as not working correctly predicted 19,711, 21,188 and 18,974 children for the three models, respectively. The off diagonal entries of the tables tell you how many children were incorrectly classified. A total of 5,102, 3,215 and 4,736 children were misclassified in Models-I, II and III, respectively. Of the not working children 92.47%, 99.40% and 89.01% and of the working children 54.28%, 59.64% and 68.70% were correctly classified in Models-I, II and III, respectively. From these results we can understand that the proportion of working children correctly classified is highest in Model-III. Overall, 82.38%, 88.90% and 83.65% of 28,965 children were correctly classified in Models-I, II and III, consecutively. This implies that the models correctly predicted more than three-quarter of the outcome. The classification tables for the three models are given in Annex 3.

Table-4.2. Result of Logistic Regression for Model-I, II and III

Independent Variables	Model-I	Model-II	Model-III
	Exp.(β)	Exp.(β)	Exp.(β)
Sex of child			
Female (RC)	1.0000		1.0000
Male	2.1221*		2.3557*
Age group of child			
5-9 (RC)	1.0000		1.0000
10-14	6.8971*		9.0804*
Relationship to the head			
Son-daughter of head and spouse (RC)	1.0000		1.0000
Son-daughter of head or spouse	1.1691**		1.0446
Sister or brother of head or spouse	0.9984		1.3311*
Other relatives	1.2207*		1.4474*
Non relatives	1.9150*		4.5599*
Sex of head of the household			
Male (RC)	1.0000		1.0000
Female	1.0157		1.1261
Parental survivorship			
Mother and Father alive (RC)	1.0000		1.0000
Either of the two dead	1.1572		1.1012
Both dead	1.2952*		1.3263*
Migration status of head			
Non-migrant (RC)	1.0000		1.0000
Migrant	0.4292*		0.8739*
Household size			
1-3 (RC)	1.0000		1.0000
4-6	1.0297		1.3251*
7-9	1.0552		1.6158*
10 and above	1.1849**		1.7319*

Table-4.2. (Continued)

Independent Variables	Model-I	Model-II	Model-III
	Exp.(β)	Exp.(β)	Exp.(β)
Place of residence of child			
Urban (RC)		1.0000	1.0000
Rural		2.4252*	2.4811*
School attendance of child			
Attending now (RC)		1.0000	1.0000
Not attending		1.4459*	1.6316*
Marital status of head			
Married (RC)		1.0000	1.0000
Div.\Wid.\Sep.		1.2972*	1.1005
Never Married		2.1910*	1.1576
Educational level of head			
Illiterate (RC)		1.0000	1.0000
Non-regular		0.7987**	0.8890
Grade 1-6		0.7336*	0.8440*
Grade 7-8		0.6947*	0.7625*
Grade 9-12		0.6399*	0.6817*
Above 12		0.5176*	0.4641*
Employment status of head			
Employee (RC)		1.0000	1.0000
Self-employee		1.3809*	1.3944*
Unpaid family worker		1.9574*	1.9602*
Employer		2.3768*	2.1022*
Others		1.0272	1.4459*
Occupation of the head			
Legislator Senior officials and managers (RC)		1.0000	1.0000
Professionals		0.5752	0.5426
Technicians & Associate professionals		1.1059	1.0669
Clerks		1.5343	1.4795
Service, Shop & Market Sales workers		1.1763	1.1393
Skilled Agricultural and Fishery		1.9626*	2.0319*
Crafts and related trade		1.2048	1.2029
Plant Machine operators & Assemblers		1.0097	0.8508
Elementary occupation		1.5165	1.5949

Source: - Computed by the author based on the 1999, National Labor Force Survey of SNNP Region.

Exp.(β) - Odds ratio

RC - Reference Category

* = Significant at $P < 0.01$, ** = Significant at $P < 0.05$

For more information about the results of Model-I, II and III please refer to Tables 1, 2 and 3 of Annex 3.

4.2.1 Sex of child and child labor

Sex of the child is categorized in to female and male and the category female is taken as a reference. The interest is to see whether males are economically more active than females. In Model-I the logistic regression output found that sex is one of the determining factors for child labor.

As was expected the result supported the hypothesis. The odds ratio [$\text{Exp.}(\beta) = 2.1221$] for the variable sex, in Model-I implies that males are more than twice likely to be child laborer than females. The result is highly and strongly significant at a level $P < 0.01$ and hence it determines child labor.

A separate model which take all variables into account is fitted to see the difference. The result of this model is tabulated in Table 4.2 under the column Model-III. The odds ratio [$\text{Exp.}(\beta) = 2.3557$] implies that male children are more than twice likely to be a child laborer than their female partners and the result is significant at $P < 0.01$ and it determines child labor. In general similar effect is observed for this variable in Model-I and III.

This result is expected in a society like Ethiopia where male children are supposed to contribute their labor in a household agricultural activities, such as, in cultivating the land, looking after animals, weeding etc., or in household non-agricultural activities like in shop keeping, in handicrafts, selling different household produced goods and items on the road sides etc. While, female's duties are considered to be in domestic non-productive works such as preparing food, cleaning the house and taking care of their little brother or sisters, etc.

In India child labor data were analyzed by running the logistic regression analysis and it was found that a boy had a higher chance of becoming a wage-paid laborer than girl becomes in urban Surat (ILO/PECC, 1996:51).

4.2.2 Age of child and child labor

Most labor force survey cover people aged 10 and above. But many children begin work at an earlier age. Rural children tend to begin their economic activity at an early stage, at 5, 6 or 7 years of age. For convenience age is divided in to two groups, namely 5-9 and 10-14. The first group is used as a reference group. The interest is to observe the effect of child labor on the two age groups. The logistic regression output in Model-I indicated that the chance of working in age group 10-14 is higher than 5-9.

As was hypothesized the chance of working has a positive relationship with age. The likelihood of working children in the age group 10-14 in Model-I is $[\text{Exp}(\beta) = 6.8971]$ which is six times more than in the reference category. The difference is highly and strongly significant at a level $P < 0.01$. Therefore, age is also one of the determining factors for child labor.

In Model-III the odds ratio for this variable in age group 10-14 is $\text{Exp}(\beta) = 9.0804$ which means those children in the age group 10-14 are more than nine times exposed to child labor compared to the reference category and the result is highly significant at $P < 0.01$. In both Model-I and III age of child is found to be a significant variable and determines child labor. Hence, there is no difference in the final conclusion of the results in Model-I and III for this variable.

The possible explanation for the above finding is that most families thought those children in the age group 10 and above are strong enough and can able to perform productive activity. Hence they use their labor such as in cultivating the land, looking after animals, in handicrafts, as a shoe shiner, as a shopkeeper, etc. as the ages' of the children increases.

The child labor survey in Indian was performed in attempt to reveal the determinants of child labor and the result showed that a child was more likely to work if he or she belongs to the age group 10-14 years (ILO/IPEC, 1996:51).

4.2.3 Relationship to the head of the household and child labor

Child labor is also influenced by the relationship to the head of the household. The relationship to the head of the household is divided into five categories of the relationship, namely, son or daughter of head and spouse, son or daughter of head or spouse, sister or brother of head or spouse, other relatives and non-relatives. The first category is chosen to be the reference category. The interest is to see whether child labor increases when the relationship to head is far away.

The logistic regression analysis for the first model indicated that the value of the odds ratio for the category son or daughter to the head or spouse is $[\text{Exp}(\beta) = 1.1691]$ which is greater by 16.91 per cent compared to the reference category and the difference is significant. It is observed that the odds ratio for the category sister or brother to the head or spouse is $[\text{Exp}(\beta) = 0.9984]$ this means that children who are sister or brother to head or spouse have 0.16 per cent lower chance of working than the reference category. But the result is insignificant. In the category other relatives' children have 22.07 per cent higher risk to be a

child laborer than the reference category and the result is significant at $P < 0.01$. In the last category called non-relatives to the head a child has 91.50 per cent higher chance of working compared to the reference category. And this results is very highly significant at $P < 0.01$. From this finding we can conclude that relationship to the head of the household is a significant variable for child labor and determines it.

The odds ratio or $\text{Exp.}(\beta)$ for the above same categories in Model-III are 1.0446, 1.3311, 1.4474 and 4.5599. Unlike in Model-I, the first value loses its significant while the second value that is 1.3311 gains its significant. However, the third and fourth values persist their significance. Among the four categories three of them became significant, therefore, relationship to the head determines child labor in this model, too.

The results clearly show us that those who have a close relation to the head have a lower chance to be involved in child labor. And those who are other relatives and non-relatives to the head have a greater risk to be a child laborer.

4.2.4 Sex of the head of the household and child labor

Sex of the head of the household is one of the independent variables in this study. It is important to see the relationship between child labor and sex of head. It is grouped as male and female and male heads are taken as the reference group. The interest is to see whether the risk to be a child laborer increases in the households headed by females.

The outcome in Model-I indicated that the chance of working is 1.0157 times higher compared to the reference category. This reveals that the likelihood that a child will work increase in female-headed households than in male-headed. But the result is insignificantly associated with child labor. Hence, sex of head doesn't determine child labor.

The odds ratios [Exp.(β)] for this variable in Model-III is 1.1261 which means that when the household is headed by females the likelihood that a child will work increased by 12.61 per cent compared to the reference category. But the result is again become insignificant and does not determine child labor. This result supported the result found in the bivariate analysis. Therefore, in both models the results revealed that sex of head does not determine child labor.

The possible explanation for this might be that mostly in Ethiopia the head of the household is male. However, when the head died his wife or one of the elderly members of the household will be head. As we all know in a society like Ethiopia male heads are responsible to generate income while female's duties are considered to be domestic works. When females become head their responsibility as head increases, that is, they have to manage the household activities and also they have to generate income, so that, in order to cover the expense in the household they push the household members including children to work.

A child labor study conducted in Indonesia also confirmed that female-headed households are most likely to have working children. In Bandung Regancy, the analysis showed that if all other factors remain constant the likelihood of child working decrease by only less than one-tenth if the head of the household is male, therefore, the sex of the household head is and insignificant factor (ILO/IEPEC, 1996:54).

4.2.5 Parental survivorship and child labor

Parental survivorship is considered as one of the variables, which influence child labor. It is comprised of three categories namely, Mother and Father alive, either of the two alive and both dead. The first category is used as the reference category.

The odds ratio in the first model for the second and third category are $[\text{Exp}(\beta) = 1.1572]$ and $[\text{Exp}(\beta) = 1.2952]$, respectively. These results are meant that those children who have lost one of their parents and those who lost both of them have 15.72 and 29.52 per cent higher risk of being a child laborer compared to the reference category, respectively. However, only the third category is significant at $P < 0.01$.

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According to the output of the logistic regression the odds ratio $[\text{Exp}(\beta)]$ in Model-III for the second and third categories are 1.1012 and 1.3263 just like the results in Model-I the first value is found to be insignificant and the second became significant, therefore, here we see no difference in the final conclusion of the results in Model-I and III.

This result is meant that those children who lost one of their parents and those who lost both of them engaged in economic activity highly compared to the reference category. This outcome clearly reveals that those children who lost both of their parents should have to work hard in order to support themselves and their family and to augment their family income.

4.2.6 Migration status of head and child labor

Non-migrant and migrant are the two categories. The first category is used as reference. The odds ratio [Exp.(β)] in Model-I for the category migrant is 0.4295 which means that the likelihood a child will work is lower by 57.05 per cent when the head of the household is a migrant compared to the reference category. This result is strongly significant at a level $P < 0.01$ (see Table 4.2). This result is unexpected further research should have to be done.

From the separate logistic regression analysis for all variables it was found that the risk of a child to be a child laborer decreased by 12.61 per cent [Exp.(β) = 0.8739] in Model-III when the head is a migrant. This result is highly significant at a level $P < 0.01$. Therefore, this outcome is in line with the result found in Model-I. This means that migration status of head is a significant variable and determines child labor in both models-I and III.

The possible explanation for this result might be that most migrants found in the urban areas. These people might come to this place because of job transfer from other urban centers or in search of job from the rural part of the region. Therefore, they may get a job, which gives them the opportunity to earn enough amount of money, which can cover the expense of the household. Therefore, they do not want to send their children to work.

4.2.7 Household size and child labor

Here, household size has been categorized into four, that is, 1-3, 4-6, 7-9 and 10 and above. The first category is used as reference. The interest is to see whether the increase in household size increases the chance of a child to be a child laborer. It was hypothesized that the likelihood of a child will work increase with size of the household. The observed result also supported the hypothesis.

As can be seen from the result the odds ratios in Model-I strictly increase as the household size increases. The odds ratios [Exp.(β)] increased by 2.97 per cent [Exp.(β) = 1.0297], 5.52 per cent [Exp.(β) = 1.0552] and by 18.49 per cent [Exp.(β) = 1.1849], respectively, in the categories 4-6, 7-9, and 10 and above compared to the reference category 1-3. However, only the odds ratio in the category 10 and above is significant at a probability level $P < 0.05$ (see Table 4.2). Even though the values in the first two categories are insignificant the results remind us that child labor increases as household size increases.

The effect of household size on child labor was examined in Model-III in comparison with Model-I. The outcome of the logistic regression result in Model-III are Exp.(β) = 1.3251, 1.6158, and 1.7319, successively. These findings are highly significant at a level $P < 0.01$, therefore, household size highly determines child labor. The values in the categories 4-6 and 7-9 were insignificant in Model-I but here in Model-III they gain their significance.

The possible explanation for this result could be as the size of the household increases the expenditure of the household for food, clothing, education, etc., increases. As the consequence, the household reached the point at which it can not cover all the expenses with only the income generated by the household head due to this and other reasons children are forced to go out and work.

4.2.8 Place of residence and child labor

Place of residence is one of the variables which highly determines child labor. Place of residence is categorized into Urban and Rural the reference category is Urban. As was hypothesized the result supported that living in rural area increases the risk to be a child laborer.

In Model-II the odds ratio or $\text{Exp.}(\beta)$ for rural area is 2.4252 times greater than the urban area. The difference is highly and strongly significant at a level of $P < 0.01$. To understand the difference Model-III is fitted using all variables. The outcome in Model-III for this variable is 2.4811 and it is significant at $P < 0.01$. Hence it determines child labor. This means that children who live in the rural areas are more than twice exposed to child labor than who live in the urban areas. From this it can be said there is no difference in the final conclusion of the results in Model-II and III.

The possible explanation for this might be people in the urban areas sent their children to school and encourage them to spent their time in studying rather than push them to work. In addition to this in the urban areas the school facilities are better than the rural areas. That is, the distance from school is relatively shorter in the urban areas and also there are transport facilities too, so that, children can easily go and come back from school. These facilities might also have a contribution for the lower risk of child labor in the urban areas.

4.2.9 School attendance and child labor

School attendance is one of the main determining factors for child labor. Here school attendance is comprised of two categories attending school now (in the survey period) and not-attending school. The reference category is attending school the interest is to know whether not attending school increases the likelihood of a child will work.

The output of the logistic regression result confirms that school attendance is highly and strongly reduces child labor. Therefore, the hypothesis is proved to be true.

In Model-II it was found that those children who were not attending school during the survey year have a higher risk of being a child laborer than those who were attending. In this model the odds ratio or $[\text{Exp}(\beta)]$ for the category not attending school is 1.4459 times more as compared to the reference category. This result is highly and strongly significant at a level $P < 0.01$. Therefore, school attendance determines child labor.

The outcome of the logistic regression result in Model-III for this variable is $\text{Exp}(\beta) = 1.6316$ which means that not attending school increase the likelihood that a child will work by 63.16 per cent compared to the reference category and it is also significantly determines child labor at $P < 0.01$. This variable persists its significance in this model, too. Hence, no difference is observed in the final conclusion of the results in Model-II and III in fact the value in Model-III is greater than in Model-II.

The possible explanation for this might be that those children who were attending school spent most of their time in the school, so that, they have a lesser chance to be involved in the economic activity or to be a child laborer.

4.2.10 Marital status of head and child labor

Marital status of head consists of three groups: Married, Divorced\widowed\Separated and Never Married of which the first one is used as a reference.

In Model-II the risk of a child to be a worker is 1.2972 and 2.1910 times higher in the categories Div.\Wid.\Sep. and Never Married, successively, compared to the reference category. And the results are significantly associated with child labor. Hence, here marital status of head determines child labor (see Table 4.2).

Examination of the differential in child labor in this variable is presented in Tables 4.2 under Model-II and III. It can be observed that in Model-III the odds ratio [Exp.(β)] for the categories Div\Wid.\Sep. and Never Married increased by 10.05 per cent [Exp. (β) = 1.1005] and by 15.76 per cent [Exp.(β) = 1.1576] as compared to the reference category, respectively. However, both are insignificant and do not determine child labor. Unlike in Model-II this variable in Model-III lost its significance in both the categories.

The possible explanation is that as we all know marriage is necessary to lead a stable life. If marriage dissolution happen to a household or if one of the couple die the household members may face problems in covering all the expense. Hence, those households with Div.\Wid.\Sep. and Never Married heads are forced to push the children to work in order to augment the household income.

4.2.11 Educational level of the head of the household and child labor

The highest grade completed is used to analyze the educational status of the head of the household. The level of education was divided into six groups, that is, illiterate, non-regular, grade 1–6, grade 7-8, grade 9-12 and above grade 12. Here, literacy campaign and non-regular are lumped together. The first group is used as the reference. As was hypothesized as the educational level of the head of the household increases the risk to be a child laborer reduces.

In the output of logistic regression result in Model-II it was observed that there is a decreasing trend in the odds ratio [Exp.(β)] as the educational level increases. The odds ratios [Exp.(β)] are lowered by 20.13 per cent [Exp.(β) = 0.7987], 26.64 per cent [Exp.(β) = 0.7336], 30.53 per cent [Exp.(β) = 0.6947], 36.01 per cent [Exp.(β) = 0.6399] and by 48.24 per cent [Exp.(β) = 0.5176], in the groups non-regular, grade 1-6, grade 7-8, grade 9-12 and above 12 as compared to the reference, respectively. And the results are highly and strongly significant at $P < 0.01$. This finding reveals that educational level of head highly determines child labor.

The values of the odds ratios in the above same categories in Model-III are decreased by 11.10 per cent [Exp.(β) = 0.8890], 15.60 per cent [Exp.(β) = 0.8440], 23.75 per cent [Exp.(β) = 0.7625], 31.83 per cent [Exp.(β) = 0.6817], and by 53.59 per cent [Exp.(β) = 0.4641]. All the values are significant at a level $P < 0.01$ except the odds ratio [Exp.(β) = 0.8890] for the group non-regular which became insignificant (See Table 4.2). Here unlike the second model the category non-regular lost its significance. Again in this model educational level of head determines child labor. In fact most of the values in model-II are lower than in Model-III. But they lead us to the same conclusion.

The possible explanation for the above finding is that as educational level of the head of the household increases they have the opportunity to get well paid job. As a consequence their income will be high and they do want to have a better and educated children rather than make use of their labor.

In the study of child labor conducted in Indonesia by using the regression analysis it was found that the educational level of the head of the household is the most significant factor. That is, the likelihood of a child working declines with the increase in the educational level of the head of the household (ILO/IPEC, 1996:54).

4.2.12 Employment status of head and child labor

The employment status of head of the household is comprised of five groups that is employee, self-employee, unpaid family worker, employer and others. The first group employee is composed of those heads who are working in government organizations, in non-governmental organization including UN (United Nation) and those working in private organizations. The fifth group, that is, others includes those who are working as apprentice and member of co-operatives (industrial/agricultural). The first group employee is used as a reference. The interest is to see whether the probability that a child will work increases whenever the head is working as a self-employee or as unpaid family worker or as employer or working in different employment status other than the once mentioned above.

From the outcome of the logistic regression analysis for the second model the odds ratios for the groups' self-employee, unpaid family worker, employer and others are $\text{Exp.}(\beta) = 1.3809$, $\text{Exp.}(\beta) = 1.9574$, $\text{Exp.}(\beta) = 2.3768$ and $\text{Exp.}(\beta) = 1.0272$, times higher as compared to the

reference group employee, respectively (see Table 4.2). All the values are significant at $P < 0.01$ except the last, which became insignificant. Therefore, employment status of head also determines child labor. These results indicate that the chance of working for a child increases as the head is in non-regular employment and even when the head himself is an employer.

The risk of being a child laborer in Model-III for all variables in the categories self-employee, unpaid family worker, employer and others are 1.3944, 1.9602, 2.1022 and 1.4459 times more compared to the reference category. And all these results are highly and strongly significant at a level $P < 0.01$. From the above findings we can conclude that employment status of head is a significant variable for both Model-II and III.

The possible explanation for this result could be those heads employed in government or non governmental organization are educated and earn enough amount of money to support their household, so that, they prefer to send their children to school rather than to work. However, those head who are working as self-employment, as unpaid family worker and other, might have lower educational level and could not get regular employment either in NGOs or in government organizations. Therefore, their income could be low and they are forced to send their children to work in order to augment the household income or use their labor in their own household enterprise. In the category employer we observe that the chance of a child will work is 2.1022 times higher as compared to the reference category. This is a clear indication that whenever the head has a household enterprise they tend to employ more children who live in the same household for running the household business, due to, this the likelihood of a child will work obviously increase in such a household.

This result is also supported by the study conducted in Indonesia that the likelihood of a child will work tends to be higher if the head of household is either self-employed, a temporary worker or an employer with unpaid family worker (ILO/IMEC, 1996:56).

4.2.13 Occupation of the head of the household and child labor

The occupation of the head of the household is divided into nine categories namely (1) Legislator senior officials and managers, (2) Professionals, (3) Technicians and associate professionals, (4) Clerks, (5) Service, shop and market sales workers, (6) Skilled agricultural and fishery, (7) Crafts and related trades, (8) Plants, machine operators and assemblers and (9) Elementary occupation. These nine categories were adopted from the International Standard Classification of Occupation (ISCO-88, as cited in CSA, 1999). The first group that is legislators' senior officials and managers are taken as the reference group.

The outcome of the odds ratios [$\text{Exp.}(\beta)$] for the second model in each category mentioned above are 0.5752, 1.1059, 1.5343, 1.1763, 1.9626, 1.2048, 1.0097 and 1.5168. But only the likelihood of working in the first value is decreased by 42.48 per cent while the likelihood in all the other categories show an increase in the odds ratio. In this model only the value 1.9626 in the category (6) Skilled agricultural and fishery become significant at $P < 0.01$. Therefore, occupation of head also determines child labor.

To see the differentials Model-III were fitted. The values of $\text{Exp.}(\beta)$ in Model-III for the above mentioned categories are 0.5426, 1.0669, 1.4795, 1.1393, 2.0319, 1.2029, 0.8508 and 1.5949. These results are meant that the risk to be a child laborer is decreased by 45.74 and by 14.92 per cent in the categories (2) Professionals and (8) Plant, machine operators and

assemblers, respectively. But, the reduction in both categories is insignificant. On the other hand, in the remaining categories the risk increases, however, just similar to Model-II the odds ratio [$\text{Exp.}(\beta) = 2.0319$] in the category (6) Skilled agricultural and fishery become significant while all the others become insignificant. Hence, in this model too, the occupation of the head of the household determines child labor. Therefore, the conclusion for this variable in Model-II and III are similar.

CHAPTER FIVE

V. SUMMARY, CONCLUSION AND RECOMMENDATION

5.1 Summary and Conclusion

Child labor is a complicated issue in a country like Ethiopia. As in many developing countries in Africa, Asia and Latin America, Child labor is a widespread problem in Ethiopia. As Ethiopia is one of the developing countries its economy is based on agricultural activities. SNNP Region is one of the eleven regions, which has fertile land and many other natural resources. Due to the new investment policy investors from different parts of the country are focusing on this region to invest in different sectors of the economy. The majority of the people of this region reside in rural areas. In rural areas the agricultural activities need intensive labor. Therefore, people in the rural areas use their children in different agricultural activities.

The 1999, National Labor Force Survey conducted by the Central Statistical Authority attached to the questionnaire a separate section that deal with the participation of children aged 5-14 years in the economic activity to the main questionnaire.

This study has estimated the level and tried to find out the main determinants and differentials of child labor in SNNP Region. After reviewing the relevant literature data quality was assessed using Myers' index and it has been found that age heaping was seen in some of the digits ending with 0, 5 and 8. The indices are found to be 13.5 for both sexes, 13.7 for males and 13.6 for females. This result indicates that the data has moderate level of digit preference. And then a brief discussion of the background characteristics of the study population was done.

The analysis of determinants was carried out using univariate and bivariate comparison of child labor among categories of demographic and socio-economic variables. Furthermore, the logistic regression was applied in order to determine the individual effect of the different predictor variables.

The bivariate analysis was done using the chi-square test; it has been observed that there is a significant association between the dependent variable and all the independent variable except sex of the head of the household, which became insignificant.

According to the multivariate analysis in Model-I sex of head became insignificant while in Model-II all variables became significant. Model-III was fitted by using all variables and it was found that sex of child, Age of child, relationship to the head, place of residence of child, school attendance of child, migration status of head, educational level of head, parental survivorship, employment status of head, household size and occupation of head became significantly associated with the dependent variable. On the other hand, sex of the head of the household and marital status of head had been observed to be insignificant (see Table 4.2).

Sex of child is found to be statistically significant showing a positive association with child labor in both Models-I and III and it highly determines child labor. Age of child has also shown a direct relationship with child labor. That is, as the age increases the risk of exposure for child labor also increases. This is a common finding for the two models and hence it determines child labor.

The independent variable called relationship to the head revealed that the far the relationship to the head the higher become the risk. In fact, the category sister or brother of head or spouse in Model-I became insignificant but gains it in Model-III. Similarly, the category son or daughter of head or spouse that was significant in Model-I has lost it in Model-III. However, it is again directly related to child labor and is significantly determines it.

Sex of the head of the household is also one of the demographic variables which was considered in the analysis. The output of the analysis has found that whenever a household is headed by female the likelihood that a child will work increases but the result is insignificantly associated with child labor in both Model-I and III and hence it does not determine it. This result was also supported by the bivariate result of the chi-square test.

The parental survivorship is also observed in the analysis. The results in the two models have shown that the category which was nominated as both dead became significant. Migration status of the head of the household is negatively associated with child labor and is also significantly determined it. Those children with a migrant head have lesser risk of working than with non-migrant head. In both the models this variable became a significant one and determines child labor.

The result also has shown that household size has a positive relationship with child labor. As the size of the household increases the risk of a child to be engaged in the economic activity also increases, however, the first two categories in Model-I became insignificant. On the contrary all the categories in Model-III became significant hence determines child labor.

Statistically high significance and positive association is observed between place of residence and child labor. The risk to be a child laborer is 2.4252 and 2.4811 times higher in the rural areas than in the urban in Models-II and III, respectively. Therefore, it highly determines child labor.

The study also revealed that school attendance highly and significantly determines child labor. Not attending school increased the risk to be a child laborer by 1.4459 and 1.6313 times compared to the reference category in both Models-II and III, consecutively (see Table 4.2).

The marital status of the head of the household has become insignificant in all the categories and it does not determine child labor in Model-III. Contrarily, the results in Model-II in the two categories are found to be significant and determine child labor.

It was also proved that the educational level of the head of the household is inversely related with child labor. This means that as the educational level of the head of the household increases the extent that a child exposed to child labor decreases. The reduction is found to be significant in all the categories except in the first category in Model-III, however, it gains its significance in Model-II and hence it determines child labor.

The output of the logistic regression results in Model-II and III have also shown that the employment status of the head highly determines child labor but the last category in Model-II became insignificant.

The occupation of the head of the household has been divided into nine categories, however, the result only in one of the categories, that is, Skilled agricultural and fishery, has been found to be significant in both Models-II and III.

In Model-I sex of head is insignificant and in Model-II all variables are found to be significant. When account is made of all variables in Model-III sex of head and marital status of head are insignificant consequently they do not determine child labor. Among the demographic variables age of child is the one, which contributed a lot to the model having odds ratios of 6.8971 and 9.0804 in Model-I and III, respectively. And among the socioeconomic variables place of residence is found to be the most important one having odds ratios of 2.4252 and 2.4811 in Model-II and III, respectively. In general, if someone is interested to do such a study in the future it will be better for him to include more socioeconomic variables such as income of the household.

Reviewing the results of the study in terms of the hypothesis forwarded at the beginning, all the hypothesis are supported by the results and found to be true.

5.2 Policy Relevant Recommendations:

The problems of child labor and its characteristics that are elaborated by this study strongly suggest the following measures to be taken in order to alleviate the problems of child labor.

1. A clear national policy against the exploitation of children should form the basis and point of departure for government action to suppress hazardous work affecting children.
2. In view of the low level of awareness of the society about the negative effects of child labor on the growth and development of children, a strategy for community mobilization and public awareness should be designed. Awareness raising and information programs should be developed to reach specific target groups such as parents, teachers, employers, workers' organizations and the children themselves.
3. Any strategy designed to combat child labor should be accompanied by anti poverty measures such as accelerated development of the economy, empowerment of communities in implementation and decision making, establishing income generating projects and providing technical support and credit to poor communities.
4. Lowering the growth rate of the population by making the family planning programs accessibly to all areas rural and urban areas and by making health services available to all areas of the region.
5. To the extent possible access to education should be enlarged especially for low-income families. Basic skill development and vocational training should be expanded to cover both urban and rural areas of the region.
6. Appropriate measure should be taken to revise the current legislation on child labor. A child labor unit should be established in the region and systems and procedures designed so that working children are provided with basic minimum labor conditions thereby protecting their health and safety.
7. Maximum effort should be exerted to undertake surveys on different aspects of child labor at all level. Data bank on child labor should be established statistics ought to be accessible to planners to assist them to design relevant strategies for combating child labor at national, regional and community levels.

REFERENCE

- Alec Fyte and Michele Jankanish, (1997). Trade Union and Child Labor. A guide to action. ILO, Geneva.
- Alec Fyte, (1993). Child labor: A Guide to Project Design. ILO, Child Labor Collection Geneva.
- Assefa Bequele and W.E. Myers, (1995). First things first in Child Labor. Eliminating work detrimental to children, ILO, Geneva.
- CSA, (1997). The 1996 Urban Informal Sector Sample Survey, Addis Ababa.
- CSA, (1998). The 1994 Population and Housing Census of Ethiopia results for Southern Nations, Nationalities and Peoples' Region. Volume II Analytical Report, Addis Ababa.
- CSA, (1999). The 1999 National Labor Force Survey, Addis Ababa.
- CSA, (1999). The 1994 Population and Housing Census of Ethiopia Result for at Country Level. Volume II Analytical Report. Addis Ababa.
- CYAO and The Italian Cooperation, (1996). Protect children from abuse and neglect National Workshop. Addis Ababa.
- David W. Hosmer, Jr. and Stanley Lemeshow, (1989). Applied Logistic Regression, New York.
- Ed. Central Bureau of Statistics, (1993). Working Children in Bandung, Abuzar Asra, Jakarta, Indonesia.
- Form on Child Labor in Ethiopia: (2000) Directory of Organization Dealing with Child Labor in Ethiopia, Addis Ababa.
- Ghana Statistical Service, (1994). Child labor in Ghana. A methodological sample survey. A survey of child labor in Accra Metropolitan, Sene and sissala Districts, Accra.
- Gujarat Institute of Development Research, (1993). Child labor in Surendranagar and Surat Districts of Gujarat State. Results of a Methodological Survey, Pravin Visaria, Paul Jacob, Gota 382 481, Ahmedabad, India.
- Henry S. shryock and Jacob S. Siegel and Associates, (1976). The Methods and Materials of Demography, New York.
- House, W.J (1985). Cypriot Women in the Labor Market: an Exploration of myths and reality, ILO, Geneva.
- ILO, (1984). Population Development Family Welfare, Geneva.
- ILO, (1988). Combating Child Labor, Geneva.

- ILO, (1989). Still so Far to Go: Child labor in the World to day. Special report on the occasion of the Tenth Anniversary of the International year of the child, Geneva.
- ILO, (1990). Surveys of Economically Active Population, Employment, Unemployment and Underemployment, Geneva.
- ILO, (1993). International Labor Review. Volume 132, Geneva.
- ILO, (1996). Child Labor: What is to done? Document for discussion at the Informal Tripartite Meeting at the Ministerial level, Geneva.
- ILO, (1997). Child Labor in Turkey, Ankara.
- ILO, (1998). Child Labor in Africa. Targeting the Intolerable. African Region Tripartite Meeting on Child Labor. Kampala, Uganda.
- ILO, (1998). International labor conference 86th session, Report VI (2) Child labor, Geneva.
- ILO, (1999). Strengthening International Law Against Child Labor, Geneva.
- ILO, (1999). International Labor Conference 87th session. Child labor Report IV(2A) Geneva.
- ILO, (2000). Action Against Child Labor, Geneva.
- ILO, (1998). Child Labor: Targeting the Intolerable Geneva.
- ILO\EAMAT, (1996). Report on the National Workshop on Child Labor Policy and Action Program for Ethiopia. Debre Zeit, 25-26 November 1996. Addis Ababa.
- ILO\IPEC, (1994). Action for the Elimination of Child Labor, Geneva.
- ILO\IPEC, (1996). Child Labor Surveys Results of Methodological Experiments in four Countries 1992-93, Geneva.
- ILO\IPEC, (1997). Children and Work Geneva, 1997.
- ILO\IPEC, (1997). Technical Workshop on Child Labor in Commercial Agriculture in Africa Dar es Salaam.
- ILO\IPEC, (1999). Action Against Child Labor, Geneva.
- ILO\IPEC, (1999). The ILO and Child Labor, Geneva.
- Janet Hilowitz, (1997). Labeling child labor Products. Preliminary study. ILO, Geneva.
- Joost Kooijmans, (1998). Definition and Legal Provisions on Child Labor in South Africa, ILO\SAMAT, Harare, Zimbabwe

Kebebew Ashagrie and Nelien Haspels, (1995). Comprehensive and Reliable Data. Children at work, ILO, Geneva.

Maggie Black, (1997). Child Domestic workers, A Hand book for Research and Action, United Kingdom.

Radda Barnen, (1997). Definition of the Child in The context of Ethiopian Laws and Policy, Addis Ababa.

R. J. Myers, (1940) " Errors and Bias in the Reporting of Ages in Census Data, " Transaction of the Actuarial Society of America, Vol. 41, October 1940. Washington D.C.

S.W.E. Goonssekere, (1993). Child labor in Sir Lanka. Learning from the past, ILO, Geneva.

Valentina Forastieri, (1997). Children at work. Health and Safety Risk. ILO, Geneva.

Vicoria Rialp, (1993). Children and Hazardous Work in Philippines. ILO, Geneva

Yared Mekonnen, (1998). Barriers to the Utilization of Maternity care Services in Southern Ethiopia: Analysis of Service and user factors. M. Sc. Thesis in Demography, Addis Ababa University, Addis Ababa.

ZEF, Ulrike, Arnab Basu and Diana Wienhold, (1998). Child Labor and the Internatinal Policy Debete, Bonn.

Annex-1

Categories of variables used in the study

The dependent variable for this study is work status of children categorized as **working = 1** **Not working = 0**. The following variables have been used as explanatory variables for the analysis:

Demographic Variables:

Sex of child

- (1) Female
- (2) Male

Age of child

- (1) 5-9
- (2) 10-14

Relationship to head

- (1) Son-daughter of head & spouse
- (2) Son-daughter of head or spouse
- (3) Sister or brother head or spouse
- (4) Other relatives
- (5) Non-relatives

Sex of the head of the household

- (1) Male
- (2) Female

Parental survivorship

- (1) Mother and Father alive
- (2) Either of the two alive
- (3) Both dead

Migration status of head

- (1) Non-migrant
- (2) Migrant

Household size

- (1) 1-3
- (2) 4-6
- (3) 7-9
- (3) 10 and above

Socioeconomic Variables:

Place of residence of child

- (1) Urban
- (2) Rural

School attendance of child

- (1) Attending
- (2) Not attending

Marital status of head

- (1) Married
- (2) Div.\Wid.\Sep.
- (3) Never married

Educational status of head

- (1) Illiterate
- (2) Non-regular
- (3) Grade 1-6
- (4) Grade 7-8
- (5) Grade 9-12
- (6) Above 12

Employment status of head

- (1) Employee
- (2) Self-employee
- (3) Unpaid family worker
- (4) Employer
- (5) Others

Occupation of head

- (1) Legislator, senior officials & managers
- (2) Professionals
- (3) Technicians & Associate professionals
- (4) Clerks
- (5) Service, Shop & Market sales workers
- (6) Skilled agricultural and Fishery
- (7) Crafts and related trade
- (8) Plant machine operators & Assemblers
- (9) Elementary occupation

Annex-2

Table 1.1 Diagnosis of Multicollinearity for Model-I, II and III

Independent variables	VIF For Model-I	VIF For Model-II	VIF For Model-III
1) Sex of child	1.001		1.017
2) Age of child	1.021		1.132
3) Relationship to the head	1.442		1.554
4) Sex of the head of the household	1.318		1.607
5) Parental survivorship	1.288		1.438
6) Migration status of head	1.024		1.345
7) Household size	1.156		1.192
8) Place of residence of child		1.397	1.676
9) School attendance of child		1.210	1.374
10) Marital status of head		1.058	1.718
11) Educational status of head		1.456	1.529
12) Employment status of head		1.500	1.528
13) Occupation of head		1.681	1.716

Source: - Computed by the author based on the 1999, National Labor Force Survey of SNNP Region.

NB. All the values of maximum Variance Inflation Factors, VIF (collinearity) are less than 5, which shows no problem of collinearity.

Note: - Acceptable values of maximum variance inflation factor (VIF) are not exceeding 5.

Annex 3

Classification Table from the logistic regression result in Model-I only for demographic variables

Total number of cases: 28965 (Unweighted)
 Number of selected cases: 28965
 Number of unselected cases: 0

Number of selected cases: 28965
 Number rejected because of missing data: 0
 Number of cases included in the analysis: 28965

Dependent Variable.. CHWST Work Status of Children

Beginning Block Number 0. Initial Log Likelihood Function

-2 Log Likelihood 33441.751

* Constant is included in the model.

Estimation terminated at iteration number 4 because
 Log Likelihood decreased by less than .01 percent.

-2 Log Likelihood	27839.028			
Goodness of Fit	29106.024			
		Chi-square	df	Significance
Model chi-square	5602.722	13		.0000
Improvement	5602.722	13		.0000

Classification Table for CHWST Work Status of Children

	Predicted		Percent Correct	
	Not working n	working w		
Observed	+-----+-----+			
Not working	n 19711 1605		92.47%	
	+-----+-----+			
Working	w 3497 4152		54.28%	
	+-----+-----+			
				Overall 82.38%

Table: -1 Result of Logistic Regression for Model-I only for demographic variables

Independent Variables	β	SE(β)	Sig.	Exp.(β)
Sex of child				
Female	RC			1.0000
Male	0.7524	0.0302	0.0000	2.1221*
Age group of child				
5-9	RC			1.0000
10-14	1.9311	0.0318	0.0000	6.8971*
Relationship to the head				
Son-daughter of head and spouse	RC			1.0000
Son-daughter of head or spouse	0.1562	0.0611	0.0106	1.1691**
Sister or brother of head or spouse	-0.0016	0.0865	0.9854	0.9984
Other relatives	0.1994	0.0615	0.0012	1.2207*
Non relatives	0.6497	0.1145	0.0000	1.9150*
Sex of head of the household				
Male	RC			1.0000
Female	0.0156	0.0552	0.7779	1.0157
Parental survivorship				
Mother and Father alive	RC			1.0000
Either of the two dead	0.1460	0.1277	0.2532	1.1572
Both dead	0.2587	0.0521	0.0000	1.2952*
Migration status of head				
Non-migrant	RC			1.0000
Migrant	-0.8459	0.0325	0.0000	0.4292*
Household size				
1-3	RC			1.0000
4-6	0.0293	0.0635	0.6448	1.0297
7-9	0.0537	0.0663	0.4184	1.0552
10 and above	0.1697	0.0792	0.0322	1.1849**
Constant	-2.1482	0.0706	0.0000	

Source: - Computed by the author based on the 1999, National Labor Force Survey of SNNP Region.

Note: β - Regression coefficient

SE (β) - Standard Error

Exp.(β) - Odds ratio

RC - Reference Category

* = Significant at $P < 0.01$, ** = Significant at $P < 0.05$

Classification Table from the logistic regression result in Model-II only for socioeconomic variables

Total number of cases: 28965 (Unweighted)
 Number of selected cases: 28965
 Number of unselected cases: 0

Number of selected cases: 28965
 Number rejected because of missing data: 0
 Number of cases included in the analysis: 28965

Dependent Variable. CHWST Work Status of Children

Beginning Block Number 0. Initial Log Likelihood Function

-2 Log Likelihood 33441.751

* Constant is included in the model.

Beginning Block Number 1. Method: Enter

Estimation terminated at iteration number 4 because
 Log Likelihood decreased by less than .01 percent.

-2 Log Likelihood 31506.182
 Goodness of Fit 29015.851

	Chi-square	df	Significance
Model chi-square	1935.568	21	.0000
Improvement	1935.568	21	.0000

Classification Table for CHWST Work Status of Children

Observed	Predicted		Percent Correct
	Not working n	working w	
Not working	21188	128	99.40%
Working	3087	4562	59.64%
			Overall 88.90%

Table: - 2 Result of Logistic Regression for Model-II only for socioeconomic variables

Independent variables	β	SE (β)	Sig.	Exp.(β)
Place of residence of child				
Urban	RC			1.0000
Rural	0.8859	0.0471	0.0000	2.4252*
School attendance of child				
Attending now	RC			1.0000
Not attending	0.3687	0.0315	0.0000	1.4459*
Marital status of head				
Married	RC			1.0000
Div.\Wid.\Sep.	0.2602	0.0427	0.0000	1.2972*
Never Married	0.7844	0.0888	0.0000	2.1910*
Educational level of head				
Illiterate	RC			1.0000
Non-regular	-0.2247	0.0885	0.0111	0.7987**
Grade 1-6	-0.3097	0.0377	0.0000	0.7336*
Grade 7-8	-0.3643	0.0737	0.0000	0.6947*
Grade 9-12	-0.4465	0.0916	0.0000	0.6399*
Above 12	-0.6586	0.1896	0.0005	0.5176*
Employment status of head				
Employee	RC			1.0000
Self-employee	0.3227	0.1001	0.0013	1.3809*
Unpaid family worker	0.6716	0.1513	0.0000	1.9574*
Employer	0.8658	0.1693	0.0000	2.3768*
Others	0.0269	0.1124	0.8112	1.0272
Occupation of the head				
Legislator Senior officials and managers	RC			1.0000
Professionals	-0.5531	0.4801	0.2492	0.5752
Technicians & Associate professionals	0.1006	0.2661	0.7053	1.1059
Clerks	0.4281	0.3001	0.1538	1.5343
Service, Shop & Market Sales workers	0.1624	0.2629	0.5367	1.1763
Skilled Agricultural and Fishery	0.6743	0.2592	0.0093	1.9626*
Crafts and related trade	0.1863	0.2621	0.4772	1.2048
Plant Machine operators & Assemblers	0.0096	0.3679	0.9791	1.0097
Elementary occupation	0.4164	0.2600	0.1093	1.5165
Constant	-2.2547	0.2545	0.0000	

Source: - Computed by the author based on the 1999, National Labor Force Survey of SNNP Region.

Note: β - Regression coefficient

SE (β) - Standard Error

Exp.(β) - Odds ratio

RC - Reference Category

* = Significant at P<0.01, ** = Significant at P<0.05.

Classification Table from the logistic regression result in Model-III for all variables

Total number of cases: 28965 (Unweighted)
 Number of selected cases: 28965
 Number of unselected cases: 0

Number of selected cases: 28965
 Number rejected because of missing data: 0
 Number of cases included in the analysis: 28965

Dependent Variable: CHWST Work Status of Children

Beginning Block Number 0. Initial Log Likelihood Function

-2 Log Likelihood 33441.751

* Constant is included in the model.

Estimation terminated at iteration number 4 because
 Log Likelihood decreased by less than .01 percent.

-2 Log Likelihood 25994.303
 Goodness of Fit 29277.841

	Chi-square	df	Significance
Model chi-square	7447.447	34	.0000
Improvement	7447.447	34	.0000

Classification Table for CHWST Work Status of Children

Observed	Predicted		Percent Correct
	Not working n	working w	
Not working	18974	2342	89.01%
Working	2394	5255	68.70%
Overall			83.65%

Table: - 3 Result of Logistic Regression for Model-III for all variables

Independent Variables	β	SE	Sig.	Exp.(β)
Sex of child				
Female	RC			1.0000
Male	0.8568	0.0321	0.0000	2.3557*
Age group of child				
5-9	RC			1.0000
10-14	2.2061	0.0353	0.0000	9.0804*
Relationship to the head				
Son-daughter of head and spouse	RC			1.0000
Son-daughter of head or spouse	0.0436	0.0657	0.5066	1.0446
Sister or brother of head or spouse	0.2860	0.1079	0.0080	1.3311*
Other relatives	0.3698	0.1034	0.0002	1.4474*
Non relatives	1.5173	0.1296	0.0000	4.5599*
Sex of head of the household				
Male	RC			1.0000
Female	0.1187	0.0669	0.0759	1.1261
Parental survivorship				
Mother and Father alive	RC			1.0000
Either of the two dead	0.0964	0.0612	0.1153	1.1012
Both dead	0.2824	0.1065	0.0071	1.3263*
Migration status of head				
Non-migrant	RC			1.0000
Migrant	-0.1348	0.0373	0.0003	0.8739*
Household size				
1-3	RC			1.0000
4-6	0.2815	0.1074	0.0085	1.3251*
7-9	0.4798	0.1702	0.0049	1.6158*
10 and above	0.5492	0.1982	0.0053	1.7319*

Table: - 3 (Continued)

Independent Variables	β	SE(β)	Sig.	Exp.(β)
Place of residence of child				
Urban	RC			1.0000
Rural	0.9087	0.0530	0.0000	2.4811*
School attendance of child				
Attending now	RC			1.0000
Not attending	0.4896	0.0376	0.0000	1.6316*
Marital status of head				
Married	RC			1.0000
Div.\Wid.\Sep.	0.0958	0.0671	0.1535	1.1005
.Never Married	0.1463	0.1201	0.2229	1.1576
Educational level of head				
Illiterate	RC			1.0000
Non-regular	-0.1177	0.0692	0.2134	0.8890
Grade 1-6	-0.1696	0.0440	0.0001	0.8440*
Grade 7-8	-0.2711	0.0845	0.0013	0.7625*
Grade 9-12	-0.3831	0.0993	0.0001	0.6817*
Above 12	-0.7677	0.1684	0.0000	0.4641*
Employment status of head				
Employee	RC			1.0000
Self-employee	0.3325	0.1080	0.0021	1.3944*
Unpaid family worker	0.6731	0.1700	0.0001	1.9602*
Employer	0.7430	0.1929	0.0001	2.1022*
Others	0.3687	0.1340	0.0059	1.4459*
Occupation of the head				
Legislator Senior officials and managers	RC			1.0000
Professionals	-0.6114	0.4924	0.2144	0.5426
Technicians & Associate professionals	0.0647	0.2782	0.8160	1.0669
Clerks	0.3917	0.3166	0.2161	1.4795
Service, Shop & Market Sales workers	0.1304	0.2774	0.6383	1.1393
Skilled Agricultural and Fishery	0.7090	0.2737	0.0096	2.0319*
Crafts and related trade	0.1848	0.2767	0.5042	1.2029
Plant Machine operators & Assemblers	-0.1615	0.3865	0.6760	0.8508
Elementary occupation	0.4668	0.2742	0.0886	1.5949
Constant	-4.5773	0.2821	0.0000	

Source: - Computed by the author based on the 1999, National Labor Force Survey of SNNP Region.

Note: β - Regression coefficient

SE (β) - Standard Error

Exp. (β) - Odds ratio

RC - Reference Category

* = Significant at P<0.01

DECLARATION

I the undersigned declared that this thesis is my original work, has not been presented for a degree in any other university and that all sources of material used for the thesis have been duly acknowledged.

Name Seyoum Tadesse

Signature



Place and date of submission

AAU June, 2001

Professor Seyoum Gebre Selassie

Advisor



Signature

June 29, 2001
Date