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DETERMINANTS OF FEMALE LABOUR FORCE PARTICIPATION IN URBAN ETHIOPIA

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Determinants of Female Labour Force Participation in Urban Ethiopia

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TABLE OF CONTENTS

ACKNOWLEDGEMENT

TABLE OF CONTENTS

LIST OF TABLES

ABSTRACT

CHAPTER I

INTRODUCTION 1

1.1 GENERAL BACKGROUND OF THE STUDY 1

1.2 STATEMENT OF THE PROBLEM 2

1.3 OBJECTIVE OF THE STUDY 6

1.4 THE SOURCE OF DATA AND THE METHODOLOGY 6

1.5 SIGNIFICANCE OF THE PROBLEM 8

1.6 ORGANIZATION OF THE STUDY 9

CHAPTER II

A REVIEW OF LITERATURE 10

2.1 THEORETICAL BACKGROUND 10

2.2 ECONOMIC THEORIES 11

2.3 REVIEW OF EMPIRICAL LITERATURE 16

2.3.1 AGE 16

2.3.2 EDUCATION 17

2.3.3 MARITAL STATUS 18

2.3.4 FERTILITY 20

2.3.5 MIGRATION STATUS 21

2.3.6 HOUSEHOLD INCOME 22

2.4 HYPOTHESES TO BE TESTED 24

2.5 THE RATIONAL FOR THE STUDY 26

CHAPTER III

MODEL SPECIFICATION 29

3.1 THEORETICAL SPECIFICATION OF THE MODEL 29

3.2 EMPIRICAL SPECIFICATION OF THE MODEL 32

3.3 LOGISTIC REGRESSION ANALYSIS 38

CHAPTER IV

DISCUSSION OF THE RESULTS 42

4.1. CHARACTERISTICS OF FEMALE LABOUR FORCE PARTICIPATION 42

4.1.1 ECONOMICALLY ACTIVE AND INACTIVE PERSONS 42

4.1.2 AGE SPECIFIC LABOUR FORCE PARTICIPATION RATES 44

4.2 SOCIO ECONOMIC AND DEMOGRAPHIC FACTORS IN THE DETERMINATION OF FEMALE LABOUR FORCE PARTICIPATION 64

4.2.1 LOGISTIC REGRESSION ANALYSIS. 64

4.2.1 MARITAL STATUS 67

4.2.2 AGE 68

4.2.3 MIGRATION STATUS 69

4.2.4 INCOME OF HOUSEHOLD HEAD 70

4.2.5 FERTILITY 71

4.2.6 EDUCATION 72

CHAPTER V 77

SUMMARY AND CONCLUSION 77

BIBLIOGRAPHY 84

APPENDIX 1A 88

APPENDIX 1B 89

LIST OF TABLES

Table 4.1 Age specific participation rates of both sexes 46
Table 4.2 level of education by sex 49
Table 4.3 Distribution of women and men workers by education and age group 52

Table 4.4 Employment rate of women and men by education 54
Table 4.5 Marital status against sex 56
Table 4.6 Percentage of marriage against age group and sex 57
Table 4.7 Employment of men and women by marital status 58
Table 4.8 Age specific labour force participation rates of women 61
Table 4.9 Distribution of employed and not employed women by number of children 62
Table 4.10 Age specific labour force participation rates of both migrants and non migrant women 63
Table 4.11 Logistic regression results 66
Table 4.12 probit regression results 74

ABSTRACT

Although wage labour opportunities are scarce for both men and women in Ethiopia, female participation rates remain lower than male participation rates and females are dis-proportionately concentrated in certain occupations of the labour force. Indeed, the participation of women in all aspects of the development process is very limited. However, little is known about the factors which are responsible for such a low level of female employment in Ethiopia. To this end, this study was designed to examine the determinants of female labour force participation in urban Ethiopia using data from the 1994 Urban Household Survey.

The following methodologies are employed in this study. Different estimation methods (descriptive statistics, the logit and the probit models) are used to estimate the coefficients with respect to age, education, fertility, migration status, marital status, and income of household head. It is found that female labour force participation is positively related to age, education, and migration status, where as it was negatively associated with fertility, marital status, and income of the household head. Moreover, the analysis of the determinants of female labour force participation which employs both logit and probit models identifies age, fertility, marital status,migration status and education as the most important factors responsible for the low level of female participation in the work force in urban Ethiopia.

Based on the findings, the study recommends that extensive family planning programmes are necessary in order to increase the educational status of women by releasing women from household responsibilities associated with child bearing.

CHAPTER I

INTRODUCTION

1.1 GENERAL BACKGROUND OF THE STUDY

Over the last decade, much has been written and many forums have been organized on issues of women in development. Such forums and academic research have intended to appraise the advancement of women and help focus international attention on women's critical contribution to the life and development of their families, communities, and nations.

Basically, these forums called for the integration of women into the economy with the dual purpose of improving both their own livelihood and that of their families, as well as promoting development in their countries. In response to the call and resolutions adopted in these forums, many governments formulated programmes and designed specific projects that promoted the status of women in order to enhance their participation in gainful economic activities.

Despite several measures taken, women's employment status continues to exhibit persistent disadvantages. For instance, women hold traditional jobs, occupy low-status positions, and earn much less than men do. Female employment is characterized by occupational segregation as a result of traditional societal sex-typing of roles and the division of labour at home. The so called "feminine" jobs have acquired the characteristics of nurturing, caring and service tasks that are generally compatible with family and home responsibilities. Despite the

fact that more opportunities are available to women to enter into paid employment, female participation rates remain lower in certain occupations (Roos, 1985).

Sharp occupational segregation between the sexes has been observed in many developing countries. Indeed, marginalization best describes the employment status of women in less developing countries. Marginality is defined by Osualdo Sunkel (quoted by Koo, 1985 :58) as "the lack or difficulty of access to a reasonable and stable income." It is characterized by underemployment and poverty. Marginalization is expressed in the open market activities, small craft production, and other informal economic activities.

Thus, women in developing countries experience the adverse effect of sex segregation. Their development in the economic sphere is hampered by the persistence of traditional attitudes regarding their place in the home, in particular, and in the society, in general.

1.2 STATEMENT OF THE PROBLEM

Ethiopia, next to Nigeria and Egypt, is classified as the third most populous country in Africa, with an estimated population of over 55 million in 1995, of which, females constitute over 50 per cent [CSA, 1992]. In urban areas, which is dominated by rural-urban migrants particularly of women, the female population accounts for not less than 55 per cent of the potential labour force. As stated above, wage labour

opportunities are scarce for both men and women in Ethiopia. However women, suffer much greater disadvantages than men. For instance, women which account for about 55 percent of the urban population of Ethiopia and 53 percent of the urban labour force, only 17.9 percent were employed in both the public and private fields of the sector against 82.1 percent of men (MOLSA, 1987).

It is also estimated that out of the total number of women employed in the formal sector two-thirds are in manufacturing (mainly textile and food processing) social services (dominantly clerical). As far as the informal sector is concerned most urban working women are found in informal sector employment. According to a study done by the Ministry of Labour and Social Affairs in (1978), 24 percent of the urban employed were "own account workers" or "self employed". As these figures reveals, there is a tendency for women to take up 'marginal' work. That is to say, work which is considered inferior in status and renumeration. Thus, women are less represented in the labour force and occupy low paying positions when they are employed in non domestic activities.

To improve the status of women in general and to increase the labour force participation of women in particular, the Ethiopian government formulated programmes and designed specific projects that aimed to both promote the status of women and to enhance their participation in gainful economic activities. For example, the Ethiopian constitution accorded

women equal status to men in 1987. Article 35.1 and 36.1 of the constitution states that:

> "Ethiopians are equal before the law, irrespective of nationality, sex, religion, occupation, social or other status."

The constitution further states that:

> "Equality among Ethiopians shall be ensured through equal participation in political, economic, social and cultural affairs."

Although women are equal before the law, their participation rate in the labour force has been very minimal.

Today, Ethiopia is undergoing many economic and social changes. It is crucial that women participate in Ethiopia's development process and not be a "missing piece in the development puzzle" . Women should not be left out when modernization and progress is under way in their own countries. Recently, a National Policy on Women was Adopted and Women's Bureaux were also established at both the national and regional levels as instruments for promoting the full integration of women into development and eliminating discrimination on gender grounds. In recognition of the need to address women's issues, the Transitional Government of Ethiopia has established the Women's Affairs Office at the Prime Minister's Office in April 1992. This reinforced previous legislation on women's issues which have had a considerable impact on reducing of women's sub-ordination in all aspects of life.

Yet, despite these unprecedented changes, the full participation of women in the development process is still limited: a majority of women are engaged in domestic activities and the few who work outside the home are concentrated in a limited range of occupations and professions. Generally, the female population remains under-represented in the work force and are disproportionately concentrated in certain occupations of the labour force.

There are several factors which account for the under representation of female labour force participation in urban Ethiopia. This study aims to provide a better understanding of the problem so that programmes can be effectively designed to improve the status and conditions of women in the country. Although empirical results from macro studies provide useful information on the size of the gender gap in employment and wage differential between men and women, they are less informative in providing evidence on the constraints faced by women which keep them from seeking wage employment. So, it necessary to conduct a study at the micro level in order to identify which factors are responsible for the low level of female participation in the labour force. Further, in spite of the importance of such studies for policy formulation and programme implementation, there has not been an extensive study on these issues in Ethiopia. To this end, this study was conducted to investigate the impact of various demographic, economic and social factors on the size, structure and determination of female labour force participation.

1.3 OBJECTIVE OF THE STUDY

The purpose of this study is to examine the determinants of female labour force participation in the urban labour market of Ethiopia. The analysis has two main objectives:

1) To identify the socio-economic and demographic factors that influence female labour force status; and

2) To recommend possible and appropriate policy measures which may be used to increase women's employment opportunities.

1.4 THE SOURCE OF DATA AND THE METHODOLOGY

The data used in this study are drawn from the 1994 Ethiopian Urban Socioeconomic survey carried out jointly by the Department of Economics at Addis Ababa University and the Department of Economics of Goteborg University in Sweden. The survey, which is fully described in the preliminary results report, was carried out in seven urban centres during a four week period from 13 November to 14 December 1994. The survey covers 1500 households in seven major urban centres. The selected urban centres were Mekele, and Dessie in the North, Bahir-dar in the Northwest, Addis Ababa in the centre,Dire-Dawa in the east, Awassa in the South, and Jimma in the South west.

A systematic random sampling procedure was used for selecting the households. Samples from each of these urban centres were selected by allocating the predetermined sample size of 1500 households in proportion to the total population of the selected urban centres based on the CSA 1992 projections. Accordingly, the sample included 900 household in Addis Ababa, 125 Dire Dawe, 75 in Awassa, and 100 in each of the other four towns.

All weredas in each of the urban centres and 50 percent of the kebeles are selected randomly from each wereda surveyed. The sample for the urban centre is allocated to each wereda proportional to the wereda population, which is further distributed to the selected kebeles once again in proportion to the total population of the selected kebeles in a wereda.

Interviews were conducted during the four weeks of Hidar, 1987 (EC). This period was chosen for the survey because it was expected that seasonal factors affecting the patterns of household consumption and prices will be least operative.

The survey provides data on a wide spectrum of socio-economic variables including household composition and structure, education, migration, employment and income, and consumption expenditure, and health status and other welfare indicators.

As far as the methodology is concerned, this study employs both statistical and econometric techniques. Descriptive statistics of the household and individual attributes of its members are

provided, cross tabulations are run, and logistic and probit regressions are estimated on a set of variables in order to model patterns of female labour force participation. The model incorporates three individual attributes (age, marital status, and education) and three household characteristics (number of children in the household, income and migration) as explanatory variables. These variables are entered in the model, and are accepted or rejected on the basis of maximum likelihood ratios.

1.5 SIGNIFICANCE OF THE PROBLEM

A number of studies have been conducted on women's labour force participation. Most of these studies, however, have analyzed using data from developed countries. So much less is known about the determinants of women's labour force participation in less developed countries. Recently, however, several studies on female labour force participation have focused on developing countries [Smoke, 1981; Palm, 1991; Farooq, 1985].

The importance of such studies can be viewed from many perspectives. On one hand, increased female labour force participation is regarded as a key factor for improving the status of women, as well as contributing to the economic development and welfare of society at large. On the other hand, a number of empirical studies document that increased female labour force participation exerts a negative influence on the fertility of women and is thus believed to be an important strategy towards slowing down population growth. The present study, examines these issues with the objective of adding to

the literature on the determinants of labour force participation within a developing country context.

1.6 ORGANIZATION OF THE STUDY

The study is split into five chapters. The first chapter presents the general background of the study, statement of the problem, objective of the study, data sources and methodology, and significance of the study.

Chapter two presents a review of the literature. It provides both a theoretical and empirical review of the literature on female labour force participation. In addition, chapter two presents the hypotheses to be tested.

The third chapter sets out the specification of the model. It starts with a theoretical specification of the model and ends up with mathematical specification of the model.

Chapter 4 examines the results of the models estimated and is split into two sections. The first section looks at the effects of various socio-economic and demographic factors on female labour force participation. The second part attempts to investigate the joint effect of these variables by considering all of them together.

Finally, the last chapter presents a brief summary of the results and makes policy recommendations which are based on the findings from this study.

CHAPTER II

A REVIEW OF LITERATURE

2.1 THEORETICAL BACKGROUND

This chapter presents a review of both the theoretical and empirical literature on female labour force participation. The determinants of female labour supply has many important implications including marriage, fertility, divorce, the distribution of family earnings, and male-female wage differentials.

The significant increase in women's labour force participation has been a striking feature of labour markets in most developed economies during the twentieth century. Growth in participation began at different times and has proceeded at different rates, but since the 1960's, most advanced economies have seen considerable rises in the proportion of women particularly married women (especially those with small children) in the labour force.

In this sub section, I consider several theoretical models of labour supply. According to Arrow, there is no such thing as a distinct "model of female labour supply" per se: any theory worthy of the name ought to be just as applicable to men's as to women's labour supply. Here I do not attempt to discuss comprehensively all labour supply models. Rather my focus is on

female labour supply decisions rather than labour supply in general.

Female labour supply can be analyzed using either conventional labour supply models or time allocation models. However, the main advantage of using a time allocation model is that it treats explicitly the diverse uses to which non market time may be put, those permitting quite detailed analyses of the non market behaviour of labour supply. Moreover, the time allocation model provides a useful framework for analyzing a variety of factors that affect labour supply.

Numerous factors influence women's labour force participation, including a wide variety of personal, economic, social, demographic characteristics. In this section, I describe a subset of these factors that will be included in the analysis that follows. As stated above, there are several theoretical perspectives in which to analyze female labour force participation (e.g., anthropological, feminist, sociological, economical, etc). However, this study employs economic analysis using econometric technique to highlight the determinants of household decision making concerning women's labour force participation.

2.2 ECONOMIC THEORIES

Attempts to explain female labour force participation were initiated by economists (Cain, 1966). The general theory of choice views current labour force status as a measure of labour

supply. Accordingly, the decision to work results from a choice by individuals among alternative uses of time. The choice is generally classified as either work or leisure. Work refers to activities conducted in the market in exchange for a wage. It also includes non market activities, such as attending school and home making. For most women, housework is the principal type of non-market activity.

The neoclassical theory of household choice and resource allocation originates from the work of Gary Becker (1960, 1965) who assumes that households exercise freedom of choice and behave rationally in order to maximize their utility. According to Becker, paid market work is distinguished from unpaid, household work and leisure and a family acts together as a single unity maximizing its welfare under certain constraints such as prices and income. In this neoclassical view of human behaviour, only a limited number of economic variables are examined to discover the degree to which they determine the optimal allocation of a household's scare resource, mainly time.

The theory further emphasises the existence of a decision unit (i.e., an individual or household), which is primarily interested in maximizing its welfare or utility derived from the activities it undertakes. It assumes that each decision unit has a given and stable set of preferences which don't vary significantly from those of other decision units faced with similar resource constraints. With a given set of preferences, the household strives to maximize its utility,

subject to available resource constraints. The basic resource constraint for a household consisting of a married couple is their stock of material wealth, and especially their time available for household production, market production and leisure (Becker, 1985).

The theory assumes that there is, within each decision unit, a single rational decision maker who achieves an optimal allocation of the unit's resource through the price system (i.e., money prices of market goods and services, or shadow prices of non-market activities). For example, the opportunity cost of a married women not working is the income lost as a result of her absence from the labour force. A married women, in all probability, is a member of a decision unit which consists of a household where she and her husband are the decision makers and share utilities. Children are viewed as consumer durables providing utility for the parents and consuming resources including time. As a unit, the principal activities of the household are the production and consumption of household goods, including children and related services.

George Joseph (1983) augments the theoretical framework of household choice and resource allocation developed by Becker. He develops the following assumptions on married women's labour activity. He assumes that:

1) the mother is usually specialized in home production activities, including child care, which

are time intensive, and, therefore, she is relatively less efficient in market activities.

2) family composition, through its effects on the values of the mothers' time at home, is strongly associated with female labour force behaviour.

3) the value placed by the household on the wife's time is determined to an important extent by her labour force status. Each women in a household has a range of attributes which influence her labour force status, including personal characteristics(e.g, age, marital status, etc) and economic characteristics (e.g., minimum wage rates) as well as a number of un observable factors (e.g., customary attitudes to work and leisure and household formation).

4) child care tends to be more time intensive than any other home production activity. Therefore, Withdrawal of mothers from the work force is strongly associated with their level of education attainment since it determines the opportunity cost of the mother.

The household utility maximizing model recognizes not only allocation of time between different competing uses, but also between different activities of the household including paid work outside the household and unpaid work within the household.

Household choice theory provides a useful contribution for understanding women's labour activities. The theory has shifted the emphasise from socio-structural determinants to a number of household resource allocation decisions. Although some aspects of the theory poses difficulties in empirical work (either because of the problems of translating certain theoretical concepts into empirical measures or because of the unavailability of suitable data) the theory helps to identify a number of factors which influence the work force participation behaviour of married women within the household. Also, it is rigorously deductive and empirically productive; its reductionism has a universal appeal.

Furthermore, as Joseph (1983:57) points out, the static nature of the analysis precludes the incorporation of the cyclical and secular changes in labour force participation of married women into the model. Therefore, the whole problem of intra-generational links cannot be handled within the static framework of the model.

Yet, the neo-classical theory of choice is a relevant model for this study, because it introduces several important variables which complement a supply side analysis of female labour force participation. The theoretical framework for household choice, which is based on the paid-work leisure dichotomy and is focuses on married women, is helpful in exploring patterns of female labour force participation of women by marital status (Myung, hye.k 1987, pp. 10-31).

2.3 REVIEW OF EMPIRICAL LITERATURE

2.3.1 AGE

Age is a key variable in explaining the probability of female participation. Greenhalgh (1980) and Mohan (1980) use a quadratic form to demonstrate that the participation rates of women increase at a decreasing rate as they age. However, some researchers argue that labour force participation of women is expected to follow a U-shaped profile with age, indicating changes over their life cycle (Sheehan, 1978). Hence, entry wages and potential market wages of women are associated with age, which in turn, exert effects on female labour force participation.

An empirical study done by Sheehan (1979) for the Sudan found an age pattern which had the two peaks, one at 20-24 and the other one at 50-54. For some developed countries such as the USA, previous studies have reported the existence of two peaks (Oppenheimer,1970). Apparently, the age patterns documented by various studies tend to reflect the impact of patterns of nuptiality and fertility, cultural norms and the overall levels of socio-economic development.

2.3.2 EDUCATION

The relationship between education and female labour force participation has been studied extensively. In general, education attainment is found to increase with the following factors:

a) women's earnings potential ;

b) the probability of getting employed (especially in a labour market with high unemployment, as is the case in many African countries);

C) the level of productivity in the labour market relative to that in the home; and

d) the opportunity cost of not working.

There is overwhelming evidence that education has a positive effect on female labour force participation (Anker and Knowles, 1977). Several reasons have been postulated as to why there is a positive relationship. According to Standing:

> **"It is possible to discern at least three separate, albeit related hypotheses underlying this assumed relationship. First, there is the opportunity cost argument of neoclassical economics; Second, the association may merely reflect the effect of education on relative employment opportunities; and third, the association could be due to the effect of education on income aspiration."**
>
> **Standing 1978, P.141.**

However, a few studies have indicated a non-linear relationship (U-shaped) between education and female labour force participation (Sinha 1967, Farooq, 1970). In a comparative study of five developing countries, Smock reported that women with a high school education had lower participation rates compared to women with lower or higher education. However, the study concluded that education facilitates women's entrance into the modern sector and is also important for women's upward mobility. Educational attainment is, therefore, one of the most important supply factors affecting female labour force participation. Because of the potential importance of education for women, it will receive special attention in this study.

2.3.3 MARITAL STATUS

Women have considerable discretion with regard to their labour force activity in that, unlike men, non-participation is socially acceptable. Many women are probably not actively looking for a job because of the security marriage brings. In addition, low female employment rate can be attributed to life cycle commitments. In most cultures, married women tend to specialize in home activities.

Participation in market activities by a married woman basically entails adding another activity to her normal expected function in a way that would not threaten the security of her marriage. Furthermore, marriage may be seen as an alternative to labour force participation, although this factor may not be important in cultures where child care and labour force participation are

less mutually incompatible. In certain economic groups, it is also common for women to cease working when they marry.

Generally marital status has its own distinct level of social, cultural, and economic responsibilities which enhance/hamper an individual woman's propensity to work. Hence, the labour force participation of single, married, divorced, widowed and separated women is expected to differ. For example, Youssef states:

> **"The influence of marital status and fertility as measure conditions controlling the supply of women available to the labour market has been explored [Grabill et al 1978: 262-264; Kiser et al, 1968: 200; Myrdal and Kein, 1956:61]. The general findings show that single, widowed, and divorced women are most active in the labour force; married women are least active."**
>
> **Youssef, 1974, p. 71.**

Many studies have found evidence that single, widowed, and divorced women are more active in the labour force than married women. Moreover, within the married group, those with young children work less than those without (Sweet, 1973). The above pattern, though prevalent in the USA before 1940, appears to have declined in recent decades as more married women have returned to the labour force (Oppenheimer, 1970). It should be noted that women with young children still have lower participation rates than other women in the USA.

2.3.4 FERTILITY

Fertility is an important factor in determining a women's propensity to participate in the labour force. According to George Joseph (1983), mothers tend to specialize in home production activities, including child care, which are time intensive, and, therefore, mothers are relatively less efficient in market activities. It is common for women to withdraw from the labour force during child bearing and when the children are young. Obviously, the presence of young children increases the value of non-market activities, particularly in developing countries, where child care services are very limited.

However, the literature which examines the relationship between female labour force participation and fertility is limited. The interplay between fertility and employment decisions is still not well defined but rests on many uncertainties. The problem, as stated by Durand (1975) is:

> **"Studies of international differences in labour force participation rates have been concerned chiefly with their relations with economic factors and relations of the rates for females with fertility. The findings as regards female rates have been rather negative on the whole, as no clear-cut, consistent patterns of relationship have shown up. ... a common shortcoming of the studies in this field has been insufficient attention to cultural and institutional factors."**
>
> **Durand 1975, p.1.**

A few studies (de Graft Johnson 1979, standing 1978, Sweet 1973) carried out in the U.S.A and some Africa countries (i.e., Ghana, Nigeria and sub Sudan) provide a mixed set of results. In the African studies there is a positive effect of child dependency on female labour force participation. This finding has been explained as a lack of in-compatibility between child care and work as highlighted by Standing:

> **"Perhaps in Africa, where in general a large proportion of the population are engaged in subsistence agricultural activity than in any part of the wold, the demand for child care time would be expected to have least impact on work activities ... since it is the married women who are primarily responsible for food production in African societies, a positive relationship was not surprising."**
>
> **Standing, 1978 p.188.**

Empirical studies in Sub-Saharan Africa indicate a positive relationship between female labour force participation and fertility in Ghana and Nigeria, although there is no clear relationship in Kenya, and a negative relationship in Sudan (Standing,1978).

2.3.5 MIGRATION STATUS

Several studies which have looked at the dynamics and patterns of migration in diverse circumstances have emphasized economic reasons for migration (Haris and Todaro, 1970, Barnum and Sabot 1975, Boserup 1970, Wilson 1981, Standing 1978). Wilson for example, (1981) has highlights the importance of migration as a crucial labour supply factor in Sri-lanka. It is often hypothesized that migrants should be more active in the labour

force than non-migrants. In his study of African rural-urban migration in Ghana, Caldwell concludes that:

> **"It is quite clear that there are urban pushes as well as pulls and rural pulls as well as pushes. It is also apparent that the overriding forces are economic and that the net flow of migrants is from the village to the town only because of differential in favour of the latter in the number of job opportunities or in the income earned by labour."**
>
> **Caldwell, 1968 p.117**

Another study conducted by Sheehan (1979), however, finds no significant effect of migration on female labour force participation, particularly in urban areas. One explanation for such inconclusive evidence is that the importance of migration as a supply factor is dependent on cultural factors, the level of education and the nature of industrial and occupational structure in any particular setting (Standing, 1978).

2.3.6 HOUSEHOLD INCOME

Aside from demographic characteristics, economic factors are found to be highly correlated with the labour force participation of women. The need for income is one of the most pressing factors that might drive women into the labour force. As documented by Anker and Knowles:

"The need for income as seen by the women depends on three basic elements. There is family income which could be available if the women were not in the labour force; there are the family members of various ages who have a call on family income; and there is the 'felt' need for material goods usually said to be part of one's 'taste' function."

Anker and Knowles 1983, P.189.

If the available household income is inadequate, a women's propensity to seek additional income is likely to be accelerated. Unfortunately, the above argument glosses over one important factor: that is the opportunity cost of inactivity. If the opportunity cost of inactivity is high, ceteris paribus, a woman would more likely to participate in the labour force.

Further, Standing (1978) in his study suggests that in the participation function the 'need' for income is the dominant force in explaining the participation decision of women, other things being equal. He argues that the "need" for income can be measured by several variables namely husband's income, family income excluding females earning assets or wealth possessions, the number of income earners in the family and the household status of women. All of the above, excepting women's household status, are expected to have a negative impact on female labour force participation.

A husband's socio-economic status as indicated by his income, may also influence a wife's decision to work. Generally, married women work to supplement an inadequate income. Thus, the lower the husband's income, the greater is the economic

pressure for the wife to work but the relationship may not always be negative. On the contrary, a study done by Lustig and Rendon (1979) shows that a high socio-economic status on the husband's part may promote a wife's employment, partly as a result of equalitarian attitudes and high educational attainment. Moreover, evidence from empirical studies in the United states by Sweet (1973) support the fact that female participation is negatively related to the husbands wage, other family income and other family per se equivalent adult.

2.4 HYPOTHESES TO BE TESTED

Based on the previous discussion, we propose the following underlying hypotheses and identify the signs of each of the independent variables used in this study. Logistic and probit regression analysis will be used to access the validity of propositions.

EDUCATIONAL ATTAINMENT

Following from the above discussion it is expected that, the higher the educational attainment, the higher the propensity for women to participate in the labour force. Therefore, it is hypothesized that there is a positive relationship between years of schooling and female labour force participation.

MARITAL STATUS

A women's marital status is not only an indicator of her social status, but it also captures her domestic, demographic and economic responsibilities. Therefore, an a priori expectation is that a married women in urban areas will have a lower participation rate in the labour force because she is likely to face constraints related to marital responsibilities. Due to an increase in household duties, married women are generally less likely to enter the labour force than single women.

NUMBER OF CHILDREN

More children implies a greater demand on women to stay at home doing housework. In addition, younger children are more dependent and increase the likelihood that mothers spend time at home.The higher the number of children in a household, the less likely the women in such households will be in the labour force. Therefore, it is expected that fertility and female labour force participation are inversely related.

AGE

Age may have different effects on female labour force participation. In this study, it is expected that age and participation rates will have an inverse U-shaped profile, indicating changes that occur over the life cycle. When age is entered in the participation function as a continuous variable,

it is expected that age and female labour force participation are positively related.

INCOME

Examining households with male heads only, women's participation rates will be inversely related to the income of the household head because leisure is a normal good.

MIGRATION

Since the employment process involves social and personal links, we expect female labour force participation to be positively related to how long the women has stayed in the receiving area. The longer the stay, the more likely one is able to establish the vital links required to facilitate participation in the labour force. Therefore, it is expected that migration status and female labour force participation are positively associated.

2.5 THE RATIONAL FOR THE STUDY

Female labour force participation has been studied quite extensively. However, precise information is limited to more developed countries. A great need remains to provide accurate information about women in the third world. Although it is necessary to gather information about women's labour force participation in developed counties, it is inappropriate to use

these studies as a basis for planning projects for women in low income countries. Tinker (1976:6) strongly argues against the implementation of development programmes based on the western models of women in developing nations, saying:

> **"The unquestioned transfer of erroneous beliefs about women from developed western to developing societies seems to be at the root of many of the negative effects development has had on women's lives."**
>
> **Tinker 1976, p.6.**

The realization that women in the third world countries feel, think, and behave differently from western women initiated some changes in the direction of research on women. It is acknowledged that the studies on the lives and conditions of women in less developed countries are generally inadequate, if not fragmentary (Buvinic, et al.,1983; whyte and whyte, 1982). In fact Mead and Grant (1976: vi) remarked that "the data basis is still thin." Youssef (1974) observed that comparative analysis of women's economic role and participation in developing countries is negligible.

Since the latter part of the 1970s, research on the third world women has been getting more attention. Some major works have been already published. These reports have increased our understanding of the nature of women's social and economic conditions in developing countries. However, several issues still remain.

A few studies have been conducted on women's labour force participation at the macro level in Ethiopia. For example, a study done by the T. Mulat titled "Labour Supply and the Employment Problems of Ethiopia" which was presented on the conference on population issues in Ethiopia's National Development in 1989 was the first study which can be cited on labour supply in Ethiopia. However, this study is less informative in providing evidence concerning the resources and resource constraints in participation and the wide variety of individual, family, and social factors influencing women's labour force participation. No single study at the national level focuses on female labour force participation and analyze its determinants for Ethiopia. Thus, because there is no micro evidence in to data, a detailed assessment of the pattern, structure and determinants of female labour force participation at micro level in the urban Ethiopia is necessary.

An important aim of this study, therefore, is to identify factors that are responsible for the patterns and determinants of female labour force participation at the micro-level in the Ethiopian labour market.

CHAPTER III

MODEL SPECIFICATION

Before discussing the empirical results, it is important to discuss the model specification and the expected relationships between independent variables and female labour force participation. Any interpretation of the empirical results is closely linked to how we specify the model.

3.1 EMPIRICAL SPECIFICATION OF THE MODEL

Here the main interest is to determine the effects of certain social, economic and demographic factors on the amount of time a women spends in the urban labour force. We begin by presenting a basic model of labour force participation based on an individual's utility preferences and then discuss the conceptual issues which arise from such a model when applied to the urban labour market in Ethiopia.

Participation in the labour force involves decisions by two parties (i.e., a decision by the individual on how to allocate his/her time and a decision on the part of the employer to offer the individual a job). It is this interaction of supply and demand that determines whether a person participates in the labour force or not. However, it is not always possible to specify the demand schedule when the analysis is confined to

the household level. Therefore, we will confine our analysis to supply questions.

In the estimation of a labour supply function, the use of an individual utility function is not standard. The accepted framework is to estimate the labour supply function within the family utility maximizing framework. The argument is that, since there is an interdependence of needs within the family, the individual's use of time between market and non market activity can best be understood within the context of the family. Within this framework, the amount of time a women devotes to market work is viewed as being dependent on the effective wage of the spouse as well as the non_labour income of the family. The assumption here is that men's work consists of exclusively of paid time in the market and a large proportion of a women's time is devoted to unpaid non-market work which even though it commands no monetary price is still of immense economic value to the to the family. However, Mincer (1963) has argued that it is the relative productivity of home and market work which determines how a woman spends her time, despite the fact that family income (i.e., total income by all family members_husband's and wife included) either at home or in the market also has an effect on the allocation of time between market and home activities.

In this study family income is not used as a determinant of a women's time allocation between home and market work because the concept is inappropriate for Africa. The reasons are that the arrangements within the african household and the structure

of African families impose on the women the necessity to have an independent source of income to meet here share of house hold expenditures.

Traditionally, the african wife is not wholly supported by the husband as in western societies. In the urban areas where traditional forms of occupation are not readily available, she has to create other source of income so as to meet these traditional obligations. The nature of the decision therefore for the urban Ethiopian women is not whether or not to work but what will represent the minimum period for which she would offer her labour to meet her traditional obligations. Within this context, therefore, the family utility maximizing framework is inappropriate.

The most suitable framework, therefore, is an individual utility maximization framework. Utility functions which embody personal preference for leisure will be different across individuals. The magnitude of these differences can be identified and included in the labour supply function. In the empirical work below, we include variables indicating the number of children, N; marital status,M; number of years of schooling, S; migration status, M; Age, A; Income of the household excluding females income, I, to control for observable differences across women. In this study, income of the household head is taken as exogenous variable even though it was technically indigenous is by the assumption that male labour supply is not very responsive to many of the variables that are considered to affect female labour supply, and so this

sort of assumption is not unreasonable. As it was stated above, female labour force participation is also influenced by the demand. Although demand changes have had an important influence, the female labour supply is also influenced by a number of other factors, the relative contribution of which economist have attempted to identify and to estimate.For example, a decrease in the market wage rate would increase work in the home, although the effect on work in the market and leisure was in-determinant. Finally there are other variables which we cannot quantify or identify. Thus, noise from missing variables and data collected are captured by the error term. The variables included in this study are few not only because of lack data but also because the study is confined to the supply factors.

3.2 EMPIRICAL ESTIMATION OF THE MODEL

The labour participation equation is derived from a simple model of individual behaviour in which the individual is assumed to maximize his/her utility subject to an income constraint. The micro economic problem faced by the individual is to maximize the following utility function U(C,L) subject to the following budget constraint: R+WH-PC = O. THE model can be derived from the following utility maximization function.

$$MAXU(C,L).....(1)$$

Subject to PC ≤ R + WH

where C = consumption

L=Leisure

R=exogenous income(non-wage)income

W=Wage rate

H=number of hours worked =T-L

T=length of time period

P=price of consumer goods

The first order conditions of a maximum of (1) subject to (2) are:

$$\mathcal{L}=U+\lambda[PC-R-\dot{W}(T-L).....(2)$$

$$\partial\mathcal{L}/\partial C=U_C+\lambda\overset{P}{W}=0$$

$$\partial\mathcal{L}/\partial H=U_L+\lambda W=0$$

This set of equations lead to the equation for the latent labour supply: T-L = H = H*(W,R,X) where x are a set of explanatory variables of the preference. To simplify the situation we use linear reduced form of the equation:

$$Y_i=\beta_0+\sum_{j=i}^{k}\beta_j X_{ij}+U_i.....(3)$$

Then, the model of the latent labour supply is:

$$H^{\circ}=\alpha W+\beta R+X\delta+\epsilon.....(4)$$

Where e=error term

The participation to the labour market is deduced from the sign of the latent labour supply.

PARTICIPATION

D = 1 if the person is in the labour force

= 0 else

$$(D=1) \leftrightarrow H^{\circ} > 0$$

$$(D=0) \leftrightarrow H^{\circ} \leq 0$$

Then

$$P(D=1) = P(\alpha W + \beta R + X\delta + \varepsilon > \ldots (5)$$

$$= P(\varepsilon > -\alpha W - \beta R - X\delta) \ldots\ldots\ldots\ldots\ldots (6)$$

$$1 - F(-\alpha W - \beta R - X\delta) \ldots\ldots\ldots (7)$$

$$P(D=0) = P(\alpha W + \beta R + X\delta + \varepsilon \leq 0) \ldots\ldots\ldots (8)$$

$$= P(\epsilon \leq -\alpha W - \beta R - X\delta) \ldots\ldots\ldots (9)$$

$$= F(-\alpha W - \beta R - X\delta) \ldots\ldots\ldots\ldots (10)$$

Where F is the cumulative distribution function of ϵ.

If the distribution of U is symmetric, since

$$(1 - F(-Z) = F(Z)$$

then,

$$P_i = F(B_0 + \sum_{j=0}^{k} B_j X_{ij}) \quad \text{.....(11)}$$

where the Xij are the explanatory variables and Bi the coefficient of the estimates

Since the observed Di are just realization of a binomial process with probabilities given by (11) and varying from trial to trial depending on (Xij) we can write likelihood function as:

$$L = \prod_{Di=1} P_i^{Di} \prod_{Di=0} (1 - P_i)^{(1 - Di)} \quad \text{.....(12)}$$

The functional form for F in (11) will depend on the assumption made about the error term ϵ. If the cumulative distribution of the error term (ϵ) is logistic we have what is known as the logit model. In this case:

$$F(Z_i)=\frac{EXP(Z_i)}{1+EXP(Z_i)}.....(13)$$

where $Z_i = B_0 + B_1X_2 + B_2X_2 + \ldots + B_pX_p$ is the linear combination of the X_i's

which are the independent variables.

Hence,

$$\ln\frac{F(Zi)}{1-F(Zi)}=Zi.....(14)$$

Note that for logit model pi is the probability that women i is in the labour

force and 1-pi is the probability that women i is not in the labour force. Then the logit model is stated as:

$$\ln\frac{(Pi)}{(1-Pi)}=B_0+\sum_{j=1}^{k}B_jX_j.....(15)$$

and the corresponding multiplicative logit model can be formulated as:

$$\frac{P_i}{1-P_i}=e^{B_O}e^{B_1X_1}...e^{B_pX_p}.....(16)$$

The left hand side of this equation is called the log-odds ratio. Thus the log odds ratio is a linear function of the explanatory variables. In logistic regression the analogue of the global F test is a likelihood ratio chi-squared test statistics which is often referred to as the model chi-squared.

If it at least one of the beta's in equation (15) is non-zero, then the model chi-square is significant.

If the error term U_i in equation (4) follow the normal distribution, we have what is known as the probit model (it should more appropriately called the normit model, but the word probit was used in the biometric literature). In this case

$$F(Z_i)=\int_{-\infty}^{z_i/\sigma}\frac{1}{2\sqrt{\pi}}EXP(-t^2/2)dt.....(17)$$

Maximization of the likelihood function of equation (12) for either the probit or the logit model accomplished non-linear estimation methods. There are several computer programmes for the probit and logit analysis.

Since the cumulative normal and the logistic distributions are very close to each other except at the tails, we are not likely to get very different results using equation (13) and equation (15) that is the logit or the probit method, unless the samples are large (so that we have enough observations at the tails). However the estimates of the parameters B_i from the two methods are not directly comparable. Since the logistic distribution has a variance $\pi^2/3$, the estimates of B_i obtained from the logit model have to be multiplied by $\sqrt{3}/\pi$ to be comparable to the estimates obtained from the probit model (where we normalize σ to be equal to 1).

Mainly this study uses the logit model rather than the probit model. However, since the sample is large, it is expected that the cumulative distribution function may follow the normal cumulative distribution function. Therefore, the probit model analysis is also used for comparing the results with the logistic regression results. The derivation of the probit model is attached at the Appendix 1B. Since all the interaction effect results are insignificant they were dropped out from this study.

3.3 LOGISTIC REGRESSION ANALYSIS

Great improvement have been made, during the past decades, in contingency table analysis. Log-odds contingency table analysis or logistic regression analysis is a generalized approach to the analysis of categorical and/or qualitative data in behavioral research. This method has a solid foundation in theoretical statistics through the work of Goodman, Bishop and others.

A dependent variable is estimated as a function of one or more explanatory variables in the usual regression analysis. It is assumed to be continuous and normally distributed around the regression line. Since our dependent variable is dichotomous, (i.e., it takes on a value of one if the respondent is in the labour force and zero otherwise), ordinary least squares (OLS), is not appropriate for our analysis. OLS is not the best method because it violates basic linear model assumptions of normal

distribution of the error term and homoscedasticity. This problem is highlighted by Maddala as follows:

> **"A serious problem with the linear probability model ... is that the estimated Y values which are conditional probabilities may not lie between the 0 and 1 limits."**
>
> **Maddala 1992, p.324.**

As stated above, a more appropriate procedure is the logit regression analysis. The assumptions required for using the techniques of the logit model are attached at the Appendix 1B.

Logistic regression methods accommodate a simultaneous analysis of qualitative/categorical variables. Logistic models are especially appropriate for this study since the study is cross classified on the bases of two or more qualitative variables and a simultaneous assessment of effect or relationships among these variables is desired.

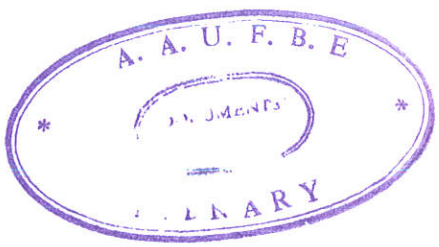
In logistic regression models (log-linear model) a dependent variable can be treated analogously to a regression in which the independent variables affect not the probability but the odds on the dependent variable (e.g., the ratio of the employed to the unemployed). The odds ratio concept forms the back bone of the logistic regression and it is important to have a clear idea about this ratio. The odds ratio is the ratio of the two odds. Odds, in turn, are themselves, ratio's of the number of events to the number of nonevents (probability {event occurring}/probability{event not occurring}).

In logistic regression models, the presence or absence of an association between or among variables can be determined on the basis of whether subjects who fall into respective categories of one variable differs appreciably in their response to the other variable (i.e., identification of differences between or among groups). Multiplicative models are transformed into linear equations, by taking natural logarithms of all the terms. That is, the numerical values of each constituent factor is expressed in terms of its natural logarithm and the equation is linearized (hence the term "logistic" as the descriptor of the model). The log of the expected cell frequency is an additive function of a constant plus terms for each variable and their interrelationships. The parameters in the logit model can be interpreted as the change in the log odds associated with a one unit change in the independent variable.

But with the logit models where the variable or variables are qualitative and a test of arrangement is desired between observed and expected frequencies on the basis of some hypothesis, the likely hood ratio statistics ($L^{2)}$ is commonly used. This is because (1) the expected frequencies are estimated by maximum likely hood methods and (2) L^2 can be partitioned uniquely for more powerful tests of conditional independence in multi-way Tables (Knoke and burke 1980). The larger the L^2 relative to the available degrees of freedom, the more the expected frequencies depart from the actual cell entries. Since logistic regression models don't have built-in error term, it is not possible to obtain estimates of error variability within the structure of the model per se. Instead,

a series of model is specified, which contains a different set of parameter estimates. On the basis of these parameter estimates, the expected number of cases that fall into specific categories is compared with the observed number, and a chi-square "goodness-of-fit" test is carried out. Unlike common practice in the analysis of variance (ANOVA) where all interaction effects are included, logistic regression procedures eliminate those interaction effects which are non-significant to obtain a simpler, more parsimonious model.

The major task in logistic analysis then becomes one of examining each model for "goodness-of-fit" and selecting the model that appears to be most acceptable and reasonable (i.e., that explains factors affecting observed data or that fits observed data well). The goal of logistic regression methods is to try to define and describe attributes, measured by data, in the fewest number of terms, in the simplest of structures, without distorting or sacrificing meaning. The objective is to seek parsimony of explanation and to strive to choose models that contains only parameters essential to functional explanation.



CHAPTER IV

DISCUSSION OF THE RESULTS

4.1. CHARACTERISTICS OF FEMALE LABOUR FORCE PARTICIPATION

Female labour force participation is contingent on many economic, demographic, and socio economic factors. These factors include age, marital status, education, fertility, migration, economic status (means of livelihood and income levels) etc. This section, using descriptive statistics, presents results on the level of participation and investigates the relationship between the above factors and female labour force participation through uni-variate analysis. Before I go to analyze the age specific activity rates it is necessary to identify who are the economically active and inactive in Ethiopia.

4.1.1 ECONOMICALLY ACTIVE AND INACTIVE PERSONS

Information on employment status in the 1984 census of Ethiopia was collected for all persons aged 10 years and over. In urban areas, the 'current status' approach was employed, while in rural areas the usual status approach was adopted. In the usual status approach, persons aged 10 years and over were asked "were you engaged in productive work during most of the last 12 months?". Those who replied "yes" were regarded as economically active or working. In the current activity status

approach, person's age 10 years and over were asked "were you engaged in productive work during one week prior to the census day?". Respondents who reported at least one day of productive work during the last seven days were considered as employed or economically active.

According to 1984 census of Ethiopia, the economically active population, which is also referred to as the labour force, includes those who were employed as well as those who were unemployed. The employed population consists of those who were engaged in productive activities during the reference period and also persons who have had regular jobs but did not work during the reference period because of poor health, social reasons, seasonality of work, annual leave, or temporary closure of establishments due to maintenance or lack of raw materials. The unemployed population consists of those who were not working during the reference period and those who were actively looking for work or discouraged job seekers (i.e., those who were not actively looking for work but were ready and wiling to take up a job if one is available).

Based on the above definition, therefore, the following categorization of females in the labour force has been utilized in this study.

(1) the employed population consists of persons who were in productive activities for at least one day during the reference period (previous seven days);

(2) Those who were off season, or whose establishments was temporarily closed for maintenance or due to lack of raw materials, and those who had jobs but were not working due to health, or other; and

(3) the rest of the respondents are classified as inactive.

According to the definition given above, out of the survey which covered 7063 persons aged 10 to 59 years, 3427 persons or 48.5 percent were economical active, while 3636 or 51.5 percent were economically inactive. The corresponding figures for both sexes are 54.4 percent for males and 43.7 percent for females.

4.1.2 AGE SPECIFIC LABOUR FORCE PARTICIPATION RATES

The size of the total population is only a rough index of labour supply. The population age structure is a better indicator. In this regard, age specific participation rates provide a more realistic measure of labour utilization since the effects of age are removed. Activity rate statistics facilitate the transformation of labour supply data into measure of levels of employment. According to 1984 census, economic participation rates (i.e., the ratio of the economically active to the labour force multiplied by 100) vary between age groups and reference periods. Thus depending on the age group and the time span of observation, the rates of

economic participation assume different values. Therefore, such statistics facilitate the comparison of employment and labour force participation rates across groups (Standing, 1978). In this part of analysis, our focus is on the differences between men and women.

Although refined activity rates provide a better measure of labour force participation by only taking into account the population at risk (usually those aged 15 and over years) other than the crude activity rates which take into account the total population in the denominator, it should be noted that they are affected by the minimum age of entry into the labour force. The estimates presented in this part of the analysis take into account responses from those aged 10-59 years. The lower age limit was fixed on ten because many people begin taking part in productive activities at young ages. Below ten years of age the level of participation in productive activities is estimated insignificant. The upper age limit was fixed 60 because the population age 60 and above make only 1 percent of the total population so that their inclusion or exclusion would cause less than a 1 percent variation in the estimates of the economically active. The economic activity rates (which are some times referred to as "activity rates" or "participation rates") are computed in this study as the ratio of the economically active population to the population aged 10 to 59 years. Table 4.1 provides age specific labour force participation rates by age group.

TABLE 4.1 AGE SPECIFIC PARTICIPATION RATES OF BOTH SEXES

AGE GROUP	1984 CENSUS RESULT		1994 SURVEY RESULT	
	MALE	FEMALE	MALE	FEMALE
10-14	11	11.8	1.2	2.9
15-19	28.1	29.2	24.6	29.1
20-24	64.4	46.9	71.7	71.1
25-29	86.6	41.9	88.9	78.7
30-34	93.3	38.2	94.6	70.4
35-39	95.4	36.6	94.3	55.7
40-44	94.5	38.9	94.9	46.8
45-49	94.3	38.7	96.5	46.7
50-54	87.1	36.2	78.4	45.2
55-59	78.2	35.3	50.6	39.3
MEAN	73.3	35.4	69.6	48.8

SOURCE:1994 Ethiopian Urban Household Survey.

For comparison, rates are calculated form the Ethiopian census and are presented in Table 4.1. A careful look at the table indicates that there is much consistency between the two data sources. In both sets of data, participation rates are higher for men than for women.

Unlike rural Ethiopia, where the age specific activity rates of males and females have a similar central plateau pattern,

female participation rates in urban Ethiopia are lower than male rates except for the age groups 10-14 and 15-19. For males, the lowest participation rate is about 1.2 percent for those observed in the 10-14 age group. This rate reaches its peak 96.5 percent in the age group 45-49. It starts to decline with advancing age (see Table 4.1).

The female participation rate is about 3 percent in the age group 10-14 years. Activity rates for females increase with age and reach their peak 79 percent at the age group 25-29 which is earlier peak than for men. Thereafter, the participation rates declining. This may occur as a result of women leaving the labour force because of marriage and child birth. Further, under reporting of female participation in productive work may also contribute to low participation rate for females.

The activity rates of females at young age is very small compared to the rate at older ages. At ages 10-14 only 3 percent and at ages 15-19 only 29.1 percent of women were economically active. The major reason for the low activity rate in these age groups is that a large proportion of the young women population is still attending schools and there is a limited chance of employment in urban areas.

A causal reading of Table 4.1 shows that females have a far lower rate of economic participation than males. This differences between sexes hold true for all age groups except (10-14 and 15-19). In the urban areas women's participation rate is not only generally low but also reaches its peaks early

(age group 25-29). The low participation rate among urban females, among other things, can be attributed to the limited chance of employment opportunity for females in the modern urban labour market. It's early peak pattern on the other hand, signifies the possibility of incompatibility of the reproductive role of the urban (i.e., marriage, child bearing and child rearing) with employment status. The result of which is that an increasing number of women tend to drop out from the labour force as they grow older. The early peak pattern shows that female participation reaches its peak early and then starts to decline. This may occur as a result of women leaving the labour force because of marriage and child birth.

EDUCATION

Although female participation in education has shown an improvement since 1974, enrolment is usually below that of boys. The gap widens as the level of education rises. Table 4.2 contains the distribution of the sampled urban population by sex and educational qualification.

TABLE 4.2 LEVEL OF EDUCATION BY SEX

EDUCATION	MALE	FEMALE	TOTAL	% FEMALE IN TOTAL
NEVER ATTENDED	3.2	13	8.5	83.1
PRIMARY	34.3	39.7	37.3	58.1
JUNIOR SECONDARY	17.7	15.1	16.3	50.6
SENIOR SECONDARY	37	28.7	32.5	48.2
OVER 12 YEARS OF EDUCATION	7.8	3.5	5.4	34.9
TOTAL	100	100	100	48

SOURCE: 1994 Ethiopian Household Urban Survey.

According to the survey data 13 percent of women in urban Ethiopia and 3.2 percent of the men had no formal education. Further, Table 4.2 illustrates that 91.5 percent of the sample aged 10 to 59 years have formal education. The corresponding figures for each of the sexes was 96.8 percent for males and 87 percent for females. Looking at the sexes separately 34.3 percent of the literate males and 39.7 percent of females had completed grades 1 to 6. This clearly shows that the proportion who completed grades 1 to 6 was significantly higher among

females than among males. This implies the existence of an inverse situation in the case of completing higher grades.

Further, 28.7 percent of the women had attended school up to the upper levels of senior secondary school and only 3.5 percent had continued to over 12 years of education level at all. The majority of women had primary school education i.e., 39.7 percent. On the contrary few women 3.5 percent have had over 12 years of education against men which have 7.8 percent. Further Table 4.2 illustrates that male workers have higher rate of higher education. (i.e., senior secondary and above) than female workers. For example 7.8 percent of men workers have over 12 years of school education, whereas less than 3.6 percent of female workers do.

The share of educational participation for women from the total is 48 percent. Females participation in education is very low as compared to men. Post secondary education appears to have a significant effect on female labour force participation. This result suggests that if education is to be effective in enhancing female labour force participation, it is the level of education that matters. In these regard, therefore, the low level of educational attainment has serious implications for female participation in the urban labour market where an educational qualification is often a prerequisite for employment. Low levels of educational achievement by women explains largely why they participate so heavily in informal sector activities. Most formal employment opportunities require some formal education.

As can be seen from Table 4.2, the differences in educational attainment between the sexes is greatest in lower and higher levels of education. Women have higher rates of enrolment at lower levels of education while men are disproportionately represented at higher levels of education. Moreover, differences in educational attainment between the sexes is greatest in the youngest cohorts. Female workers in the youngest cohort are disproportionately educated than those in old cohorts when compared to male workers.

TABLE 4.3 DISTRIBUTION OF WOMEN AND MEN WORKERS BY EDUCATION AND AGE GROUP

AGE GROUP	10-29	30-44	44-59	ALL
EDUCATION				
MEN				
NEVER	38	29	30	97
PRIMARY	735	146	169	1050
JUNIOR	424	71	45	540
SENIOR	830	223	79	1132
OVER 12 YEARS OF EDUCATION	135	129	55	319
TOTAL NUMBER	2162	598	378	3138
WOMEN				
NEVER ATTENDED	149	162	165	476
PRIMARY	962	318	178	1458
JUNIOR	461	74	20	555
SENIOR SECONDARY	892	149	12	1053
OVER 12 YEARS OF EDUCATION	121	67	12	200
TOTAL	2585	770	387	3742

SOURCE: 1994 Ethiopian Urban Household Survey.

The distribution of the sample survey aged 10-59 years and above by educational attainment, age group, and sex is given in Table 4.3. This Table reveals that most of the persons who have formal education were in their young ages. The survey population is predominantly of young with 68 percent aged under 30 years. For each of the two sexes the highest number of persons who have formal education were in the age group 10-29 years followed by those persons in the age group 30-44. Generally the number of persons having formal education (in both males and females) decline with advancing age. At younger age groups (below 30 years the number of females who have formal education exceeds males; the revers is true after 30 years and above.

TABLE 4.4. EMPLOYMENT RATE OF WOMEN AND MEN BY EDUCATION

EDUCATION	EMPLOYED(N)	UNEMPLOYED(N)	EMPLOYED(%)
MEN			
NEVER	52	45	53.6
PRIMARY	329	721	31.3
JUNIOR	118	423	21.8
SENIOR	351	781	31
OVER 12 YEARS OF EDUCATION	163	76	68.2
TOTAL	1013	2046	33.1
WOMEN			
NEVER ATTENDED	218	258	74.6
PRIMARY	302	1156	20.7
JUNIOR	90	465	16.2
SENIOR SECONDARY	203	850	19.3
OVER 12 YEARS OF EDUCATION	85	43	66.4
TOTAL	898	2772	24.5

SOURCE: 1984 Ethiopian Urban Household Survey.

The results from the analysis of the survey from Table 4.4 shows that in seven Ethiopian cities, women with a high level of formal education have a better chance of being employed in the labour market than those with low education. As it was

depicted from the above table, it is clear that even though education acts as a screening factor in the labour market entry to the labour market regardless of educational attainment is also possible. However, over 12 years of education level has a significant effect on employment rate of both sexes. For instance, about 68.2 percent of men 66.4 percent women having over 12 years of education are employed.

MARRIAGE

In any study involving the performance of women in the labour market, a discussion of the status of women within the household is important, especially in a country like Ethiopia where traditional norms and values are still strong in governing individual's lives and child bearing out of wedlock is discouraged. This is because a women's allocation of time between market work and home work is to a great extent governed by her life cycle commitments. Her duties as wife and as mother determine to a large degree whether or not she can participate in the labour force.

Table 4.5 presents marital status by sex. Based on the summary Table presented below it can be observed that out of the total sampled population 73.6 percent were single, 23.9 percent were married, 1.3 percent widowed, 0.5 percent divorced, and 0.7 percent separated. The corresponding figures for women's are 62.6 percent, 23.5 percent, 5.9 percent, 5.7 percent, and 2.3 percent respectively. Furthermore, it can also be observed that 34.4 percent of the economically active females were single,

while 12.9 percent were married, 3.2 percent widowed, 3.1 percent divorced and 1.3 percent separated.

TABLE 4.5 MARITAL STATUS AGAINST SEX

MARITAL STATUS	MALE		FEMALE		BOTH SEXES	
	NUMBER	%	NUMBER	%	NUMBER	%
SINGLE	2340	73.6	2431	62.6	4771	67.5
MARRIED	761	23.9	912	23.5	1673	23.7
DIVORCED	16	0.5	221	5.7	237	3.4
WIDOWED	41	1.3	228	5.9	269	3.8
SEPARATED	21	0.7	91	2.3	112	1.6
TOTAL	3179	100	3883	100	7062	100

SOURCE: 1994 Ethiopian Urban Household Survey.

As stated above, about 62.6 percent of all females in the sample are unmarried. The majority of the single category are in the 10-29 age group. Within each age group, there are some sex differences in the marital status of the urban population. Table 4.6 indicates that while 21.3 percent of females in the age group 15-29 are already married, within the same age group the corresponding figure for male is 7.1 percent. Although more than 60 percent of the females are married within the 15-39 age group, only 36 percent of the males of the same age fall

into that category. The picture presented in Table 4.6 demonstrates that the proportion of married women is highest in three age groups, 30 to 44 years, when it begins to decrease, dropping steadily until ages 50-54 where 95.3 percent of the women are married. For males the proportion that is married rises rapidly each of the age groups, 35-39, 40-44, 45-49 and continues to remain high except the age group 55-59 where the marriage decreases from 118 to 76.

TABLE 4.6 PERCENTAGE OF MARRIAGE AGAINST AGE GROUP AND SEX.

AGE GROUP	MALE %	FEMALE %
10-14	0	0
15-19	0.2	1.5
20-24	1	7.4
25-29	5.9	12.4
30-34	10.4	16.3
35-39	18	22
40-44	19.3	16.1
45-49	19.7	11
50-54	15.7	8.6
55-59	10	4.7
TOTAL	100	100

SOURCE: 1994 Ethiopian Urban Household Survey.

In general, men tend to marry much latter than women. Such early marriage together with other women's responsibilities in the home forces them to withdraw from the labour force.

Table 4.7 EMPLOYMENT OF MEN AND WOMEN BY MARITAL STATUS.

MARITAL STATUS	EMPLOYED(N)	UNEMPLOYED(N)	% OF EMPLOYED
WOMEN			
SINGLE	379	2052	40.4
MARRIED	275	637	30.2
WIDOWED	129	92	58.4
DIVORCED	146	82	64
SEPARATED	65	26	71.4
TOTAL	994	2889	25.6
MEN			
SINGLE	420	1920	17.9
MARRIED	604	157	79.4
WIDOWED	9	7	56.3
DIVORCED	27	14	65.9
SEPARATED	15	6	71.4
TOTAL	1075	2104	33.8

SOURCE: 1994 Ethiopian Urban Household Survey.

The data from the survey further indicate that married women have greater trouble finding a job or staying in the labour force, as compered to young, single women. Table 4.7 shows that only 30.2 percent of married women are employed, while the rest about 69.8 percent are housewives. On the other hand, unmarried women are active in paid labour activities since about 40.4 percent engage in economic activities. The situation of divorced, widowed and separated women is some what different from that of married or unmarried women. Those who are divorced, widowed or separated often have to maintain not only themselves but also other family members. Such women have no choice but to find a job and have a high participation rate 64.6 percent.

In regard to marital status, labour force participation patterns among the male population is almost opposite to that of the female population. Marriage does not reduce male labour force participation, but, instead, increases it. As Table 4.7 illustrates, single men have a lower employment rate than married men. About 18 percent of single men are employed as compared to 79.4 percent of married men who are employed.

FERTILITY STATUS

Sex differentials in the aggregate employment rate can be also explained by the fertility status of women. Although no direct data on fertility was solicited from individual women, information on the number of persons aged less than 10 years

resident in the household was collected. Since most of these people would be either in school or young children, I have decided to utilize this variable as a proxy for child dependency. The presence of children may have a negative or a positive effect on labour force participation. It also depends on a women's economic and family status. In some societies, where there is strong role differentiation within marriage, women tend to enter the labour force only after divorce or widowhood or at the end of their child bearing-period. Given the social attitudes relating to mother hood, the psychic pleasure of caring for one's own child may far outweigh the benefits from working, especially when family income is high. In line with this hypothesis, we would expect very low participation rates of women during their reproductive years.

However, the presence of child may be also have a positive effect on female labour force participation. For example, Boserup and Hirschman argue that large family size puts pressure on women in less developing countries to participate in the labour force in order to supplement a low family income.

TABLE 4.8 AGE SPECIFIC LABOUR FORCE PARTICIPATION RATES OF WOMEN

AGE GROUP	WITH NO CHILD	WITH 3 CHILDREN	MORE THAN 3 CHILDREN
10-14	2.8	0	0
15-19	29.1	25	0
20-24	74.1	9.4	25
25-29	90.9	14.6	31
30-34	90.7	50.7	44.7
35-39	80.3	64.4	38.4
40-44	69	48.4	37.9
45-49	82.8	51.9	31.8
50-54	58.5	57.8	30
55-59	45.2	38.8	29.6
MEAN	62	36	26.8

SOURCE: 1994 Ethiopian Urban Household Survey.

According to the survey data on average, women had 5 dependent children. The maximum number of children under the care of the women were 13 and the minimum number was 0. Table 4.8 suggest that, on average females with no child have higher labour force participation rates 62 percent than those of women having 3 children 36 percent and those of women who have more than 3 children 26.8 percent. Other things being equal, this fact

shows the existence of inverse relation ship between number of children and female labour force participation. Further Table 4.9 presents the distribution of employed and unemployed women by number of children.

TABLE 4.9 DISTRIBUTION OF EMPLOYED AND NOT EMPLOYED WOMEN BY NUMBER OF CHILDREN

NUMBER OF CHILDREN	EMPLOYED	NOT EMPLOYED
ONE	57.1(568)	77.6(2243)
THREE	23.9(237)	9.2(265)
OVER THREE	19(189)	13.2(9.2)
TOTAL	100	100

SOURCE: 1994 Ethiopian Urban Household Survey.

It was anticipated that the higher the number, the less likely the women from these household would be in the labour force. The survey data presented in Table 4.9 indicate that women in the household with no child have 57.1 percent employment rate which is greater than that of women who have 3 or more children in the household. The lowest employment rate 19 percent is observed from women having more than three children. As stated in chapter two, the above analysis suggests that there is a negative association between number of children and female labour force participation.

MIGRATION STATUS

Movement of people from one area to anther is not a new phenomena in Ethiopia. Labour migration from rural areas to urban areas has taken place for a long time. Immigration has been a major factor in the growth of urban centres in Ethiopia.

One of the reasons why women move to towns is to search for employment and securing a job. Women also move because of marriage, divorce and other social factors. Mobility is highest for women , many of the women who migrated were literate. There is a strong correlation between the reasons for migration and the level of education women have. Table 4.10 shows age specific labour force participation rates of both migrant and non-migrant females in broad age groups.

TABLE 4.10 AGE SPECIFIC LABOUR FORCE PARTICIPATION RATES OF BOTH MIGRANT AND NON MIGRANT WOMEN

AGE GROUP	MIGRANT	NON MIGRANT
10-29	60	68.7
30-44	72	100
45-59	66.7	No respondent
MEAN	66.2	55.6

SOURCE: 1994 Ethiopian Urban Household Survey.

A careful look of result from Table 4.10 indicates that female migrants have a higher economic activity rate than non migrants. The average economic activity rate for migrant female is 66.2 percent while that of non migrant females is 55.6 percent which is lower than the former. From the survey result one can understand that migration has a positive effect on female labour force participation.

4.2 SOCIO ECONOMIC AND DEMOGRAPHIC FACTORS IN THE DETERMINATION OF FEMALE LABOUR FORCE PARTICIPATION

4.2.1 LOGISTIC REGRESSION ANALYSIS

In the preceding section an attempt was made to investigate whether differences in labour force participation among women can be differentiated on the basis of economic, social and demographic characteristics using a bivariate approach. In the analysis, each socio-economic and demographic factor was examined separately to discuss its possible effect on female labour force participation. However, it must be recognized that female labour force participation is not merely a function of socio economic and demographic factors. Rather, it is the gross effect of all these factors which determine female labour force participation. The interrelated nature of the variables means that some of the effects of these variables might be wiped out by the effect of other factors. In light of this, the main purpose of this section is to investigate whether any of the variables examined in the previous section have a significant influence on female labour force participation when all

independent variables are jointly considered. In addition, I will examine the effect of each variable in the model and identify the main factors which determine female labour force participation in urban Ethiopia. Predictor variables for the best fitting logit probability model will be chosen in a step wise manner, and the effect of predictor variables will be determined by log-odds statistics.

The independent variables used in the analysis include, age, education, marital status, number of children, migration status, and income of the household head. Dummy variables are created for all independent variables except income of the household head, and number of children. When dummy variables are formed, the number of variables used in the analysis is one less than the number of categories (i.e., if a variable has N categories, then N-1 dummy variables are constructed with the one left as the reference category). In this study, the reference category is the category that exhibits the lowest labour force participation among the groups observed in the bivariate analysis. Hence, the regression coefficients presented in Table 4.11 are interpreted with the reference to the reference category. The effect of coefficients are used to estimate the likelihood of women being employed in one group compared to the population at large; they can be interpreted as the increase or decrease in log-odds of female labour force participation (depending upon the sign of the coefficients). When I compare the average to each level of explanatory variables. The hypothesis that I present in chapter 2 will be

reviewed and discussed in terms of the results of the analysis.

TABLE 4.11 THE LOGISTIC REGRESSION RESULTS

VARIABLE	COEFFICIENTS	STANDARD ERROR	SIGNIFICANCE LEVEL	EXP(B)
INCOME OF HOUSEHOLD HEAD	-0.0002	0.0001	0.1833	0.9998
AGE 15 TO 19	2.1099	0.5457	0.0001	8.2471
AGE 20 TO 24	3.9691	0.5597	0.0000	52.9344
AGE 25 TO 29	5.0048	0.5973	0.0000	149.1225
AGE 30 TO 34	5.4385	0.6144	0.0000	230.0951
AGE 35 TO 39	5.0329	0.6122	0.0000	153.3711
AGE 40 TO 44	4.8964	0.6205	0.0000	133.8085
AGE 45 TO 49	4.5669	0.6347	0.0000	96.2485
AGE 50 TO 54	3.8518	0.6618	0.0000	47.0762
AGE 55 TO 59	3.3232	0.6865	0.0000	27.7504
PRIMARY	-0.2946	0.2262	0.1929	0.7448
JUNIOR	0.3659	0.1794	0.0414	0.3874
SENIOR SECONDARY	0.9483	0.1738	0.0000	1.4418
OVER 12 YEARS OF EDUCATION	2.1040	0.3436	0.0000	8.1990
MIGRATION STATUS	0.8383	0.1710	0.0000	2.3123
MARRIED	-1.9790	0.2745	0.0000	0.1382
WID/DIV/SEP.	0.2911	0.3309	0.0060	0.2734
FERTILITY	-0.1648	0.0370	0.0000	0.8481
CONSTANT	-2.8402	0.5176	0.0000	

4.2.1 MARITAL STATUS

To examine how marital status affects female labour force participation, the variable is entered into the participation function as a series of dummy variables. Non-married women are used as the reference category. Married women are expected to have a lower probability of participation in the labour force than those who are not married. A negative association between marital status and the dependent variable is expected.

The results of the logistic regression are presented in Table 4.11. They reveal that marital status has the predicted effect on labour force participation rates. According to the Table, marital status has a negative sign and is significant. The coefficient on marital status is -1.9790 which implies that married women have a decreasing probability of being employed by 1.9790 of log odds; while the expected proportion being in the work force increases for widowed/divorced/separated women by 0.2911 of log odds. The relatively low participation rate of married women and high employability of non-married females supports the hypotheses that, for a majority of urban Ethiopian women, marriage reduces labour force participation while being single increases it. This is most likely because married women have more household responsibilities and, therefore, are more likely to withdraw from paid employment than non-married females. On the contrary, unmarried women (reference category) are more likely to participate in the labour force than married. The possible reason for this might be single women are more likely to face substantial economic responsibilities in

the household which add pressure on them to seek work. From the results, it appears that marital status is one reason why there is such low level of female employment in urban ethiopia. For a majority of Ethiopian women, marriage is a limiting factor in their decision on female labour force participation. Young unmarried women who are free from various household duties actively participate in market labour activities until they get married, while married women are much more influenced by economic and demographic conditions of household.

4.2.2 AGE

Age is entered in the participation function as a series of dummy variables, broken down into five year age groups, to take into account any non linearity in the relationship between age and labour force participation. The omitted category is 10-14 years which is used as a reference category.

The results from the logit reveals that the likelihood of female labour force participation rises monotonically with age. All of the age variables are significant and have positive impact on female labour force participation. Therefore, age is significantly related to labour force status, but in a non-linear fashion. This is readily seen by glancing at the coefficients. Younger women (under 20 years) and older women (over 50 years) are less likely to participate than women in the 20-49 years age range. These results suggest an inverse U-shaped age-participation profile which accords with a priori

expectations and other empirical results from developing countries.

The effect of age on participation is notable for the 14 to 19 age group where participation is at its lowest. Participation peaks at the age of 25 to 39 and is level until the age of 50. For older women , the probability labour force participation declines.

The results suggest that age is also an important determinant in explaining female labour force participation. That is, other things being equal, a one unit increase in age increases the log odds of female labour force participation by 21 percent for women in the age group (15-19) and by 34 percent for women in the age group 25-29.

4.2.3 MIGRATION STATUS

Migration status in this study is entered as a dummy variable in which 1 indicates that the woman is a migrant and 0 indicates she is a non-migrant. Significant variations in female labour force participation are also examined by migration status. According to the results, the coefficient on migration status is significant and positive implying that, ceteris paribus, migrant women are more likely to be in the labour force than non-migrants in urban Ethiopia. Again, this result is expected since migrant females have come to the city presumably in search of jobs. The results from the estimated logit show that migrant females have increasing probabilities

of being in the work force by 0.2250 log odds, as compared to the reference category. Thus, we may conclude that migration status is another important factor which influences female labour force participation in urban Ethiopia.

4.2.4 INCOME OF HOUSEHOLD HEAD

The income of the head of household is also used as a continuous variable. Contrary to our hypotheses, income has an insignificant effect on female labour force participation in urban Ethiopia. Furthermore, when examining households with male heads only, women's labour force participation rates are inversely related to the income of household head. As it was depicted from Table 4.11, the coefficients of income of household head which is (-0.0002) implies that income of household heads on female labour force participation has a decreasing probability of being in the work force by 0.0002 of log odds which is quit small. Labour force participation of female members is affected by the economic wellbeing of the household (the lower the wage of the household head the more likely the women of the household head are to be in the work force and the reverse is also true). According to the results, therefore, income of household head is not an important determinant in influencing female labour force participation in urban Ethiopia.

4.2.5 FERTILITY

Fertility as a proxy for child dependency is used as a continuous explanatory variable in this study. As hypothesized earlier, the coefficient attached to fertility is significant at 1 percent level and the finding indicates a negative relationship between fertility and female labour force participation. The B_coefficients which measure the change in the log odds of being in the labour force controlling for all other explanatory variables in the model indicate that as the number of children increases female labour force participation decreases (i. e., each unit increase in the number of children in the household reduces the odd of having a female labour force participation by a factor Exp(-0.1648)). This confirms the fact that women from households with more children are less likely to be in the labour force than those from household with less children. This is because it is common for women to withdraw from the labour force during child bearing and when their children are young. Obviously, the presence of young children increases the value of non-market activities, particularly in developing countries where child care services are very limited. The estimates for children aged under 10 are consistent with the literature. The above result is consistent with those from the bivariate analysis and those other studies which are duly mentioned in the previous section.

Generally, fertility is important factor which influences female labour force participation in urban Ethiopia.

4.2.6 EDUCATION

Because education affects a women's decision to join the labour market, is also used as an explanatory variable in this study . Educational achievement is broken down into five dummy variables. The first level is "never attended' and is used as a reference group. The other categories include, primary; junior, senior secondary, and over 12 years of education level. It is expected that the coefficients on schooling variables will be positive since education increases women's labour market participation.

Table 4.11 presents the results of empirical estimations of the regression equation. Contrary to our hypothesis, education at lower grades was not significant, perhaps because there are a large number of women in the non formal who have low level of education. Both senior secondary and over 12 years of education levels show that education does significantly increase the labour force participation of women. The coefficients on the two levels of education in Table 4.11 implies that the expected proportion being in the work force increases from 0.9483 log odds to 2.1040. The above finding implies that educated women, relative to those with little education, are much more likely to be employed in urban Ethiopia.

Generally, as one might expect, education does significantly increase the probability of a women to participate in the labour force (i.e., the more she is educated, the more she will be able to participate in the labour force). However the degree

of significance of education is not as strong as expected on the determination of female labour force participation.

In the estimation of the empirical model of the determinant of female labour force participation of women in urban Ethiopia, the results indicate that entry into the labour market for women is largely determined by the age of the respondents, fertility, marital status, and by her migration status. Although education is important, its importance in facilitating access to the labour market depends on the employer's preference and her past job experience.

4.3 PROBIT ANALYSIS

Like the logit model estimates, the probit model estimates produced similar results. Table 4.12 presents the results of the probit estimation for females.

TABLE 4.12 PROBIT REGRESSION RESULTS OF FEMALE LABOUR FORCE PARTICIPATION

Parameter Estimates (PROBIT model: (PROBIT(p)) = Intercept + BX):

VARIABLES	COEFFICIENTS	STANDARD ERROR	T-RATIO
CONSTANT	-0.96072	0.09561	-10.04785
AGE	0.03350	0.00311	10.75570
FERTILITY	-0.09762	0.01533	-6.36660
PRIMARY	-0.42864	0.06917	-6.190539
JUNIOR	0.35239	0.08584	4.10539
SENIOR SECOND.	0.42111	0.07421	5.67436
OVER 12 YEARS	0.85336	0.11622	7.34286
MARRIED	-0.32023	0.08537	-3.75107
WID/DIV/SEP	0.79918	0.09411	8.49170
MIGRATION STATUS	0.60647	0.08940	6.78395
HUSBAND'S INCOME	-0.00005	0.00005	-1.01457

Note: Sample is women aged 10 to 59 years

Log-likelihood= 3279.35

P=0.000

Pearson Goodness-of-Fit Chi Square = 3279.350 DF = 1918 P = .000

Since Goodness-of-Fit Chi square is significant, a heterogeneity

factor is used in the calculation of confidence limits.

From the above table it is apparent that age is an important determinant of participation. It is significant at 1 percent level. Further, fertility proxied by the number of children in this study has the expected negative and significant impact on participation, indicating that women with more household responsibilities participate less in the labour force.

As it was depicted from Table 4.12 more educated women will have high rates of labour force participation. According to the probit estimation, schooling is also an important determinants of female labour force participation. It is significant at 5 percent level for all schooling levels.

Like in the logit estimation, marital status, in the probit model estimation also has expected negative association and significant effect on female labour force participation in urban Ethiopia. According to the table above, the coefficients attached to migration status is significant and this confirms the fact that migrant women's are more likely to participate in the labour force than non migrant women. Moreover, income of the household head is not a significant factor in influencing female labour force participation in urban Ethiopia.

Generally, the two methods of estimation provide the same results. That is, age, education, fertility, migration status, marital status are the most important factors of which influence female labour force participation in urban Ethiopia. Similar results about the income of the household head is obtained from the two methods of estimations. In both cases the income of the household head is not significant factor in explaining female labour force participation in urban Ethiopia.

CHAPTER V

SUMMARY AND CONCLUSION

During the last two decades, many forums have been held and much written on the issues of women in the development at many levels: international, regional and national. All these forums were sources of information intended to appraise the advancement of women and to help focus international attention on the critical role which women play in the life and development of their families, communities and nations.

Basically, these forums called for the integration of women into the economy with the dual purpose of improving their own likelihood and that of their families, as well as promoting development in their countries. In response to the call and resolutions adopted in these forums, many governments formulated programmes and designed specific projects that would promote the status of women and enhance their participation in gainful economic activities.

Like women in most less developing country, Ethiopian women are less represented in the labour force and occupy low paying positions when they are employed in non-domestic activities. For example, according to a study conducted by the Ministry of Labour and social affairs (MOLSA), the number of females employed in both the public and private sectors make up only

17.9 Percent of the total labour force against 82.1 Percent of men.

In recognition of the need to address women's issues and to improve the status of women in general and to increase the labour force participation of women in particular, the Ethiopian government has formulated programmes and designed specific projects that aim to promote the status of women and enhance their participation in gainful economic activities.

For example, a National Policy on Women was adopted and Women's Bureaux were also established at National and Regional levels as an instruments for promoting the full integration of women into development in order to eliminate discriminations on gender grounds. Despite these unprecedented changes, the full participation of women in the development process is very limited. A majority of women are still engaged in domestic activities and those who do work outside the home are concentrated in a limited range of occupations and professions which usually require low skills and are poorly paid.

Furthermore, policy-oriented research that aims at identifying factors associated with increasing women's participation in the labour market is an important first step in helping women to become full participants in the development process and, specifically, in formulating workable programmes and designing appropriate strategies for successful implementation of female labour force participation. As clearly indicated in the review of literature presented in this study, however, there are only

limited studies in on female participation in this country. As a matter of fact, there is no study to the author's knowledge on the determinants of female labour force participation in urban Ethiopia at a micro level. Therefore, knowledge of the determinants of female labour force participation in urban Ethiopia is virtually non-existent. It is against this back ground that the present study was conceived within the following two objectives: 1) to identify the socio-economic and demographic factors that influence female labour force status; 2) to recommend possible policy measures to be used to increase women's opportunities for involvement in gainful employment.

To carry out the above objectives, data from the 1994 of Ethiopian urban socio-economic household survey were employed to analyze the determinants of female labour force participation in Ethiopia. The choice of the techniques for analysis was largely dictated by the nature of the data and ranged from simple statistics to relatively advanced models. In estimating the determinants of female labour force participation both the descriptive statistics (e.g., cross tabulations) and econometric techniques (e.g., probit and logit analysis) were employed.

Based on the definition of 1984 census of Ethiopia, the following categorization of the female in the labour force has been utilized in this study:

(1) The employed population consists of persons who are in productive activities for at least one day during the reference period (previous seven days);

(2) Those who were off season or whose establishments was temporarily closed for maintenance or due to lack of raw materials and those who had jobs but were not working due to health or other and;

(3) The rest of the respondents are classified as inactive.

The analysis of the effect of socio economic and demographic factors in determining female labour force participation was undertaken in two stages. In the first stage, the gross effect of the given factor on female labour force participation was examined. The second part dealt with the effect of each factor when all other factors in the study were controlled.

The results of the bivariate analysis showed significant female labour force participation variation by age, education, number of children, marital status, and migration status. However, income of the household head, appeared to have no significant effect on female labour force participation. A positive association with female labour force participation was noted for age, education, and migration status. On the other hand, an inverse relationship was observed for both fertility and marital status.

The results from the logit and probit regression analysis were very impressive. It was observed that, once the effect of all variables are controlled, income of household head seem to be less significant factor in explaining female labour force participation in urban Ethiopia.

The results of the model, however, confirmed the acceptance of the hypotheses that female labour force participation and age are positively related. Further, we also confirmed that the hypothesis of positive association between female labour force participation and education. Further the study showed female labour force participation of migrant women was higher than that of non-migrant urban women. This confirmed the hypothesis of significant effect of migration status on female labour force participation. Another important finding was related to marital status. It was found that currently married women are less likely to be in the labour force than nonmarried women. Therefore, the hypothesis of negative association between marital status and female labour force participation was accepted. Finally the last finding was with regard to fertility. The study confirmed the hypothesis that there is inverse relationship between number of children and female labour force participation in the urban labour market of Ethiopia. Finally, marital status and fertility were among the most significant factors that explained female labour force participation in urban Ethiopia.

On the whole, the regression analysis showed that female labour force participation was influenced by the following 5 factors:

age, migration status, marital status, fertility and education. The empirical results reinforced the major points I have made in the preceding sections.

RECOMMENDATION

This study, being the first of its kind to be under taken in the country at a national level, found results that will be appealing not only for further research but also to planners and policy makers.

One needs to know what affects female labour force participation to be able to make forecasts about the future labour force trends, and the government is interested in the effect that policy measures might have on female labour force. Further information on factors influencing the determinants of female labour force participation can help explain local labour market conditions which might be useful to government agencies in tackling problems such as high female unemployment. Accordingly, on the basis of the findings the following recommendations are made.

Because low female labour force participation is as a result of high fertility in the country, there is a need for the government to actively react to this situation. This can be achieved through expansion of existing family planning services. To this end, an awareness raising programme need to be launched and delivery services also need to be expanded. Women and, perhaps even more men, need to realize once and for

all that they should give birth only to the number of children that their time, money, and energy can afford and guarantee future perspectives.

At this point, the role of education cannot be marginalized. As stated earlier, increased education provides women with increasing opportunity to participate in labour force participation and proper uses of services like family planning and others. Thus, it is positively recommended that the government make all the necessary effort to increase the educational status of urban women by reducing gender imbalance in educational attainment.

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APPENDIX 1A

ASSUMPTIONS UPON WHICH THE LOGIT MODEL IS BASED ON

Logistic regression assumes, first, that the dependent variable is categorical, with either ordered or un-ordered categories. Second, it is assumed that the observations are independent of each other . Third, it is assumed that the conditional probabilities of event occurrence, which are the bases of the logits used in the model, are related to the explanatory variables through the logistic distribution function. Fourth, the sample size is assumed to be "large," so that the asymptotic properties of maximum likely hood estimators are applicable. Finally, it is assumed that no exact linear dependencies exist among the explanatory variables.

APPENDIX 1B

DERIVATION OF PROBIT MODEL

Probit is an abbreviation of the term "probability unit". The probability model is based on a normal distribution. A probit is the inverse of the cumulative standard normal distribution function. For any given proportion, the probit transformation returns the value below which that proportion of standard normal deviates is found.

Some researchers prefer to use a probit model to analyze dichotomous dependent variable over logistic regression model. These two models are very similar and yield essentially identical results after adjusting for scale reference. The choice between a probit and logistic model is influenced by practical considerations such as availability of software, personal preference, and experience. Logistic regression and probit analysis are closely related and in most cases, probit and logistic coefficients differ only by a scale factor. Logistic specification is more common due to its link to log-linear models and also the availability of computer software. The probit procedure in SPSS/PC +expects input data at the aggregate level.

To understand the probit model, assume that there is a theoretical index Z_i which determined by a covariate X_i as in the linear regression model. The index Z_i is assumed to be a continuous variable which is random and normally distributed:

$$Z_i = \alpha + \beta X_i$$

Suppose we have data which distinguish only whether individual observations are in one category (high value of index) or a second category (low values of index). We employ the probit model to obtain estimates for the parameters α and β while at the same time obtaining information about the underlying unmeasured scale index.

To obtain an estimate of the index Z_i, we apply the inverse of the cumulative normal function:

$$Z_i = F^{-1}(p_I) = \alpha + \beta X_I$$

The interpretation of P_i resulting from the probit model is straight forward and it is an estimate of the conditional probability that an individual falls into one category, given the individuals education (X_i). This is equal to the probability that a standard normal variable will be less than or equal to $\alpha + \beta X_i$.

DECLARATION

I, the undersigned, declare that this thesis is my original work and has not been presented for a degree in any other university. All source of materials used for the thesis have been duly acknowledged.

Name: Amsaya Anteneh

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Place: Addis Ababa

Date of submission: June 3, 1996.