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Examining Determinants of Female Employment in Paid Labor Market

The Role of Socioeconomic, Demographic and Cultural Factors: Urban Ethiopia

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Abstract

The urban dwellers, particularly females, have desperately been penalized by abject unemployment in paid labor market. Despite of inconsiderable job discrimination by gender, females' employment status is significantly lower and unemployment status is rampant compared to males'. With increasing of labor supply in the market and comparatively limited demand for labor by employers, females are recommended to adjust their socioeconomic, demographic and cultural characteristics so as to prosper their likelihood of finding job in paid labor market.

The purpose of the study is to scrutinize measure and recommend some socioeconomic, demographic and cultural factors that could supposedly increase odds of female employment. Logistic regression technique is employed on two consecutive Demographic and Health Survey data, separately, to estimate the odds ratios of female employment in paid labor market. The econometric findings from both survey datasets show that most of the selected socioeconomic, demographic and cultural individual characteristics influence females' propensity of finding job in paid labor market.

Key Words: **Paid labor market, Logistic regression, Time investment, socioeconomic, demographic and culture models**.

Table of Contents

1. INTRODUCTION

1.1 Research Problem

Ethiopia's population is expanding at breakneck speed and the growth is overwhelmingly higher than the country economy can support. With an averagely increasing of two and half million people per year and expansion of labor force participation rate, no matter how the general domestic product seems to keep growing for continuous years, for the last 5-7 years, the country economy doesn't seem to absorb the huge volume of labor joining the working age group. As a consequence, unemployment became one of the foremost socioeconomic problems that the country is bottlenecked by.

Having a closer look at the employment statistics controlled for gender and residing areas portrays a picture biased to male in urban areas. Despite of a roughly perfect pyramidal population structure (both in age and sex structure) for long serious years, female employment status is worse. After examining unemployment rate by gender for youth (20-24) and as whole, a study shows that women experience higher level of unemployment than their male counter parts in the country (Berhanu Geda, 2005/07). The 2000 EDHS[1] shows that among respondents that are included in the surveys, 58 percent of rural and 51 percent of urban females; and 89 percent of rural and 73 percent of urban males are employed. It also reveals 7 percent of the rural and almost 6percent of the urban female respondents were not working by the time of the interview (EDSH: 2000).

The considerable difference in employment status by gender while access to paid labor market is equally constrained for males and females in the context where there is no such significant gender discrimination in the working areas (labor demanding side) is the foremost motivation why I desired to design my research question on this particular issue. This motivation cascaded serious of interesting research questions. *Which socioeconomic, demographic and cultural individual characteristics affect females' chance of being employed? What individual structural characteristics could increase propensity of finding job in paid labor market?* And, *which factors influences dominantly?*

An attempt is made to examine selected socioeconomic, demographic and cultural variables that are determining propensity of women employment in the paid labor market. Using the two available demographic and health survey data, EDHS 2000 and EDHS 2005, the study examines how socioeconomic variables (*education*, *partner education*, *partner occupation* and *poverty*), demographic variables (*age* and *marital status*) and cultural variables (*total number of children*, *children under five years old*, *age at the first marriage*, *age at first birt*h and *religion*) influence females chance of being employed in paid labor market. Two of dominantly used variables in cross-section studies, residence areas (urban and rural) and sex (female and male), are not determining factors in this study anymore since the study is framed by choosing female lives in rural areas. Based on previous literatures findings, survey studies and theories six models (two general, two demographic, one socioeconomic and one culture models) are built and applying a logistic regression technique, the selected determinants effect on probability of finding job is examined. Concerning previous studies and literatures on female labor employment in urban Ethiopia on paid labor market, there is no as such accessible and easily available reference. The study had shortage of previous research and literatures specifically done on female labor force participation in Ethiopia, neither in soft copy nor by hard copy, let alone study on paid labor market in urban Ethiopia. I dug anywhere possible to find such helpful literatures but none of them seem to hit the head on the nail.

1 EDHS is stands for Ethiopia Demographic and Health Survey. Further note is that EDSH2000 is to imply that the survey held in 2000 and EDHS2005 is to imply that the 2005 survey. Any number extended after abbreviations are to imply the time period of the survey.

There are, however, some literatures hovering around the bush. The study consumed some important facts and figures from the available studies like "*young unemployment spell in urban Ethiopia*", "*poverty and unemployment in Ethiopia*", "*Characteristics and determinants of Youth unemployment*", "*underemployment and inadequate employment in Ethiopia, Urban Labor Markets in Ethiopia*", and likes that may provide the study with unemployment, poverty and related issues in urban Ethiopia. There are numerous literatures delivered by demographers, labor economists and sociologists in the developed world and I revised more than enough literatures concerning women employment, particularly motherhood and wage return. Instead of directly adopt the literature discussions and results in the study; I had to make sure how far contextually relevant the literatures are. Reconstructing the datasets by residing area and type of payment for working respondents in the datasets made espousing theories from some selected literatures by like B.Pettit and J.Hook, Van Der Stoep, S.Kornman and D.Neumark, J.Mincer and S.Polachek possible. By doing so the study will be, hopefully, one of the foremost, perhaps the first, literatures on female employment in paid labor market in urban Ethiopia.

1.2 Aim and Scope of the Study

The aim is, first to identify then measure the degree and significance of micro-level socioeconomic, demographic and cultural factors that allegedly influence females propensity of finding paid job in urban Ethiopia based on recommended discussions and theories from previous literatures, summary statistics from survey studies and descriptive and econometric findings from the cross-sectional survey data I used.

The study target population of the study is females in working age group, 15-49, living in urban parts of the country, working in paid labor market for cash and; for cash and in kind; and not working in paid labor market.

1.3 Thesis Outline

The first chapter is already presented, above. Chapter Two, the background part, have three sub parts. The first part discusses the general economic wellbeing of the country and, urban economy and employment opportunities in urban areas followed by female employment in urban parts of the country. Next sub chapter reviews previous literatures and dissertations that are closer to my research questions. Chapter three, Theories and Hypotheses, presents the most relevant theories, ***Traditional Neoclassical Economic Theory, Theory of Household Production Function of Family Economics*** and ***Human Capital Theory***; and discuss with some points on how to contextualize the theories and enable them to capture facts on the ground. Theoretical models followed by Hypotheses are built. In chapter four, Data and Datasets; and in chapter five, Variables and Variable Descriptions are presented. In chapter five variable descriptions parts, along with description to each variable recruited to the study, descriptive statistics of the variables from the 2000 sample dataset are presented. In doing so, the variables are briefly discussed and, repeated statements and discussion for both datasets in the descriptive statistics part is avoided. Statistical methods and variable descriptions are also presented in chapter five. Chapter six presents Empirical Findings; (odds ratios) and chapter seven, Discussions part discusses the econometric findings in relation to the proposed hypotheses. Chapter Eight, Conclusion, is followed by References and Appendixes.

2. BACKGROUND

This section highlights economic wellbeing of the country in a quite short summary way. It also gives general outlook of urban employment and female employment status in urban areas as well. Then, it is concluded with discussing previous studies and literatures concerning female employment in urban Ethiopia.

2.1 The Country Economic Wellbeing and Urban Unemployment

Ethiopian economy is predominantly agricultural and its economic policy is Agricultural Development Led Industrial (ADLI) strategy. About 50 percent of the economy, 90 percent of export earning and 70 percent of the country row materials in the economy is emanated from this sector of the economy. The 2007 National Population and Housing Census reported that an estimated 84 percent of the total of nearly 77 million people live in rural part of the country driving its livelihood from agriculture using primitive technologies (Census 2007)[2]. The sector is also seasonal and highly reliance on rainfall so that shift in rain timing, shortage of rain and excess rain have been enforcing dwellers to respond by shifting consumption behavior and mortality crises. The rest 16 percent who are residing in the urban areas have also been penalized by inflation, unemployment, underemployment and chronic poverty due to scarcity of supply of agricultural production and week performance of other sectors of the country economy.

Since the down of Soviet-kind socialist Derg regime (1991) that had operated central command economy, the country has been following free-market policy that promoted emergence of new private sectors and privatized state-run industries and manufacturing organizations. Most government businesses are privatized and private banks, insurances, textile, manufacturing, constructions sectors boomed. Interest rate decontrolled and inter-bank money and foreign exchange market introduced. As a consequence, the service and construction sectors showed considerable role in the general economy of the country. Infrastructures, health and education sectors started to expand their area coverage.

Nonetheless, the country economy has also been marred by geopolitical wars, extensive prevalence of HIV AIDS and Malaria, consecutive droughts and hangers, poor governance, corruption and internal political chose. The bloodshed border war in between Ethiopian and Eritrea had enforced the country to reallocate its national budget strangely biased to the National Defense Minister.

Few years after conclusion of the Ethio-Eritrea war without any economic or political gain, the country economy has started to start showing sign of waking up and, since for the last seven consecutive years, IMF and UN confirmed figure shows that the country has continuously been registering estimated to be in between 7 percent and 8 percent economic growth. The Ministry of Finance and Economic Development (MoFED) extends the figure up to 11 percent (MoFED 2010). However, the increasing in GDP couldn't absorb labor that is joining the labor force participating groups due to nearly consistently increasing of population growth.

Regardless of series years of GDP growth, the country is still under destitution and; severe unemployment and under employment, especially those are apparent in urban parts of the country, is prevalent. Update of preliminary document prepared by International Monitory Fund (IMF) and International Development Association (IDA) stuffs explicit that in 1995/96, 42 percent of the people lived under poverty and 24 percent of the people lived under severe poverty. In urban areas, 33 percent of the society lived under poverty and 18 percent are under severe poverty. 47 percent of rural and 25 percent of urban population lived under acute poverty, respectively (IMF and IDA, 2001).

2. Census 2007 is short hand writing of Ethiopia Housing and Population Census conducted in 2007 by federal Census Commission in collaboration with Central Statistical Agency. Even if the census was held in 2007, the summary statistics is publicized in 2008. Therefore note that the number in parenthesis doesn't show the publication year.

Different international indexes and reports put the country economic wellbeing at the bottom level of country lists[3]. United Nations Development Program (UNDP) 2009 report shows that Ethiopian is a country with an approximate of US$780 at Purchasing Power Parity (UNDP 2009). Human Development Index report reveals that the country has low human development ranks 171 with 0.367 amounts, and nearly 40 percent and 76.5 percent of the population lived on less than $ 1.25 and $2 a day at PPP respectively. Average consumption per household member is $25 which is $1 per day. A Multidimensional Poverty Index, launched from Oxford in 2010 in collaboration with UN, reveals that 90 percent of Ethiopian is multidimensional poor. The 2009 Global Hunger Index, an index that majors proportion of people in a country who are malnourished, the proportion of children who have underweight, and the child mortality rate, report that in the time period of 1990-1992, 72 percent, in time period of 1995-1997 and of 2000-2003, 61 percent and 46percent of the total population was undernourished, respectively.

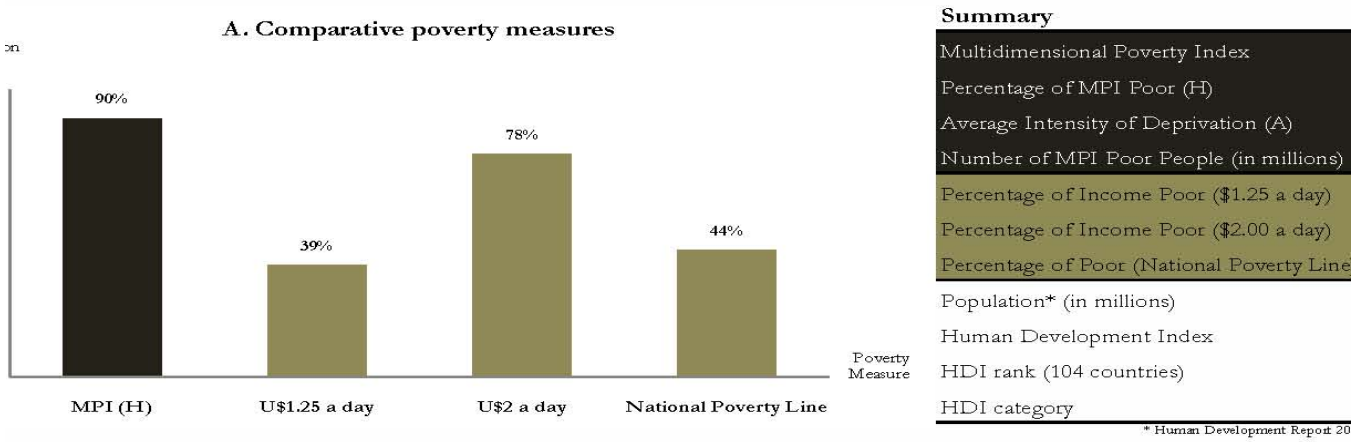

Figure One: Ethiopian Human Development Report 2010 cited from Oxford Poverty and Human Development Initiative (OPHI) country briefing 2010

2.1.1 Urban Economy and Employment in Paid Labor Market

As the rural part of the country economy is characterized by agriculture sector, the urban economy is characterized by service, industry and construction sectors. World Bank report revealed that urban employment is dominated by self employment. The report displays that 42, 18 and 16 percents of the workers in urban areas are self employed, government employed and private organizations employed, respectively the rest covers informal sector. The report added that the service sector have been playing leading role in creating job in urban parts of the country and manufacturing sector has continued in job creation.. In the report, Government is reported as the most skill intensive sector (PREDEMU, World Bank 2007)[4]. Snowballing share of service in the national GDP, since the beginning of free market-oriented economic policy, has been increasing demand for labor in those sectors that are dominantly condensed in urban areas. The increasing share of service sector in the GDP growth from 6.3 percent in 2003 to 13.3 in 2005 highlights the improvement of urban economic activity in the sector (Ethiopia MGD report, 2010)[5]. With increasing share of service sector in the national GDP, urban employment is, supposedly, improves. The private sectors employ most of the labor supply who are applying for paid job. Findings on PRDEMU claims that the formal private sector absorbs 30per- cent unemployed who are managed to find job.

3. *Here are the web links for the indexes stated above. a, Human Development Index: http://www.nationmaster.com/country/et-ethiopia/eco-economy b, Multidimensional Poverty Index: http://www.ophi.org.uk/policy/multidimensional-poverty-index/mpi-country-briefings/ c, Global Hunger Index: http://www.ifpri.org/publication/2009-global-hunger-index d, 4, PERDEMU is abbreviation stands for Poverty Reduction and Economic Management Unit Africa. And 5, MGD is for Millennium Development Goals.*

The study also reveals that 24 percent either join "another private sector" or join self employment; and 20 percent will be employed in government organizations (PRDEMU, 2007). However, the growth in the economy has not been adequately enough to absorb the supply of labor in the market. The growth in the labor supply is quite overwhelming than jobs in paid labor market the economy able to offer. Unemployment, underemployment and poverty are striking problem in the urban parts of the country. Poor economic growth performance and weak aggregated demand for labor in paid labor market is recipe for ruin when growing labor supply in need of job is combined with (Astatke,G. 2009)

The extent as well as protracted duration of urban unemployment is remarkable. In the given time period of 1999 to 2005, it soared in double digit. There is nothing called unemployment benefit. It makes waiting being unemployed hard for most of the unemployed part of the population. The wage premium in public sector could also be one reason for many stay unemployed or underemployed. The relatively high wage premium for parastatals and civil service possibly push the formal private wages up. This affects the labor demand in the sectors and, as a result, many might be driven to informal sectors taking it as a default option (PRDEMU, 2007). Yet, due to the expected wage in such streams is low compared to their expectation, many remain unemployed. The last consecutive years, however, shows that duration of unemployment has been shrinking. According to a table cited in PRDEMU adopted from its second volume, volume two, median duration of unemployment dropped from one and half years in 1999 to less than one year in 2005 (PRDEMU, 2007).

2.2 Female Employment in Paid Labor Market in Urban Ethiopia

The two Demographic and Health Survey reports; and the revised literatures reveal that the difference in employment rate in between male and female is quite wider than the gap in between their labor force participation rate. Empirical evidence calculated by taking only young women in age group 20-24 shows that unemployment rate among young women was about 39 percent while young men unemployment rate was around 23 percent (Berhanu,D. et al: 2005/07). The trend shows that when the participation rate was increasing with time, employed people in the paid labor market was also increasing. However, the increasing in the participation rate is much higher than the increasing in employment rate. The same study using Ministry of Labor and Social Affair (MOLSA) data on recorded individuals who were looking for job shows that urban female unemployment rate has increased over five years, from 1999 to 2004. It increased from 17.3 in 1999 to 43.7 percent in 2004.The increase in youth unemployment rate could suggest that is due to the increasing in participation of women in the labor force (Berhanu,D. et al: 2005/07). The higher severity of female unemployment compared to males could partly be emanated from different socioeconomic, demographic and cultural determinants and individual characteristics that ultimately affects their economic wellbeing. There are numerous unwritten social consensuses and collective thoughts among the society that has been encouraging males to be breadwinners of household economy and let females specialize social and cultural practices. In household labor division, wives and daughters are presumed to be profitable at nonpaid labor activities like housekeeping, child bearing and child caring.

Focusing only on urban parts of the country a figure (below), depicted by compiling statistics from Central Statistical Agency yearly reports, CSA (1991, 1999a, 1999b), shows that either taking all ages or only youths in working age group, in the country level or in urban parts of the country, female unemployment is higher than their counteract males in all given years. When male urban youth unemployment decreased from nearly 35 percent in 1994 to nearly 30 percent in 2004, female urban youth unemployment increased from nearly 40 percent to around 45 percent.

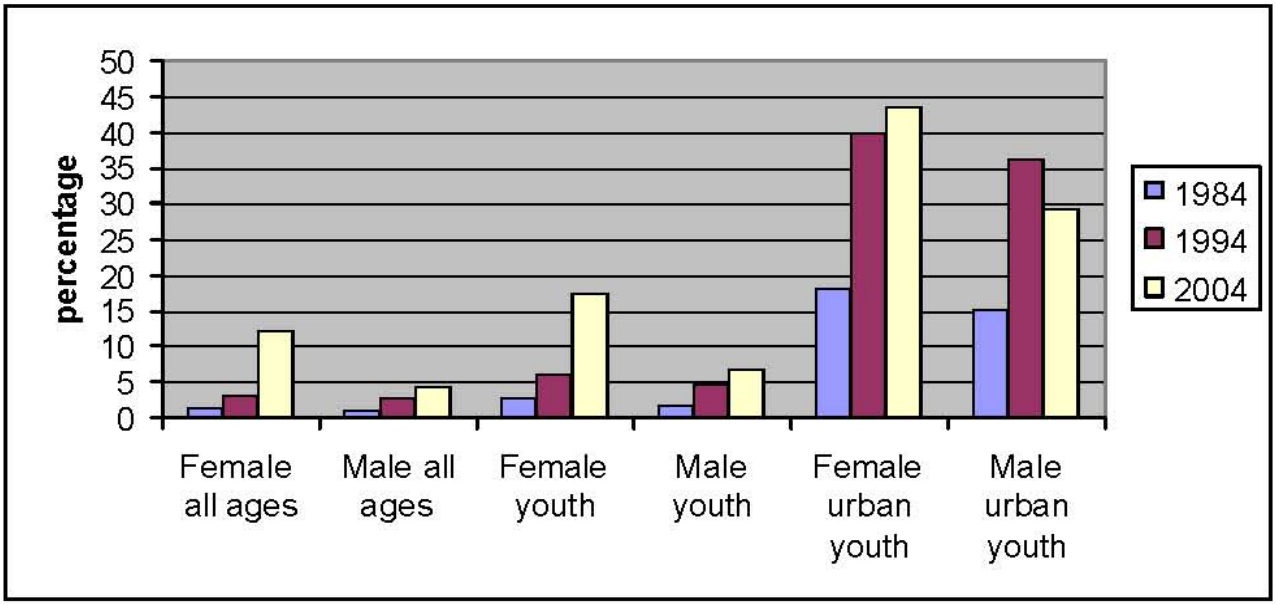

Figure two: Unemployment rates by gender for the labor force as a whole and for youth. Compiled from CSA (1991, 1999a, 1999b). Source: Berhanu Debu et al (2005/07)

Studying micro level socioeconomic, demographic and cultural characteristics of females rather than macroeconomic indicators is interesting and more essential since job opportunity in Ethiopia is roughly equally open regardless of gender. Those who fit best can enjoy equal opportunity of employment irrespective of their gender difference. World Bank press release (Press Release No: 2011/153/AFR)[6] published on the official website unveils that *gender disparity in Africa labor markets is caused by jobs scarcity, not discrimination*. The study includes Ethiopia as one of the countries existing in the same situation. Females who make social, cultural and human capital adjustments maximize the chance of being employed. The social and culture influences affect human capital of individuals and it ultimately explains their labor force attachment and overall economic performance. Studying female labor economic performance is more interesting when the society is enclave in serious of social values and practices that constrain the time, skill and motivation not to engage in labor market.

2.3 Previous Researches

Despite of females' poor economic integration, economic status and social mobility, the concern given to scrutinize this serious problem from micro-level at individual level perspectives is inconsiderable. There are, of course, literatures published that partly discusses economic wellbeing of female in urban Ethiopia. Some of those literatures shed a light on determinants that are assumed to be influencing factors of female employment. There are few literatures revised and included as reference from few of developing countries to at least strength literature review and discussion of the study.

In this sub-chapter, selected literatures are revised and focus is given for factors of selected determinants, results and general research question of the literatures. The revised literatures suggest that a female employment chance is likely to be improved if she makes characteristic adjustments to the mostly recommended socioeconomic, demographic and cultural factors.

6. The World Bank press release cited above can be accessed by this link:
http://web.worldbank.org/WBSITE/EXTERNAL/COUNTRIES/AFRICAEXT/EXTAFRREGTOPGENDER/0,,contentMDK:22750324~menuPK:502366~pagePK:2865114~piPK:2865167~theSitePK:502360,00.html

2.3.1 General literatures review[7].

Many literatures show that individual female propensity of employment and labor force outcome is affected by her socioeconomic, demographic and cultural characteristics. A female who makes structural adjustments to her socioeconomic, demographic and cultural characteristics could maximize her chance of being employed and earn better than her counterparts who posses lower characteristics. Her propensity of finding job is also affected by choice of priority she gives, either to paid labor market or domestic jobs and cultural practices and values.

A study entitled as *"**Ethiopia Urban Labor Markets in Ethiopia: Challenges and Prospects**"*, published by World Bank Poverty Reduction and Economic Management Unit Africa region discusses the challenges of fast growth of urban supply of labor in the labor market. The study states that renewed focus on growth and job creation in urban area is mainly in response to growing urban poverty and the rapid growth in the urban labor supply. The study summarizes the general urban growth of labor supply in three major shifts, a demographic shift, a geographic shift and a qualitative shift. A *demographic shift*, the study declared, promotes limited opportunities and challenges integration of rising number of youths into the labor market. A *geographic shift* discusses internal migration- while limited by current economic and land such as farmers can't sell or exchange their farmland -from rural to urban parts of the country that even without removing the constraints to mobility it seems likely that migratory pressures will continue to rise. A *qualitative shift* is an upward shift in literacy rate in the country. The study mentions the qualitative shift as one reason for need to job creation. Nevertheless, the rose of literacy rate by over 20 percent over the period 1999-2004 is remarkably low even compared to the Sub-Saharan Africa average and it is mainly below for girls. Findings in the study show education payoff for particularly females in urban Ethiopia. Given the upper end of education spectrum, the study finds that females do obtain much higher returns to education than males and its significance is higher somewhere like Addis Ababa, capital city. Compared to illiterate women, high skilled women premium is estimated 90percent higher. The econometric outputs shows that, taking illiterates as the reference group, the impact of education on earnings ranges from 26 percent higher for those with grade 1-4 to 130 percent higher for the high skilled.

A panel based study *"**Unemployment Duration in Poor Developing Economics: Evidence from Urban Ethiopia**"* by Dendir,S discusses the vulnerable duration of urban unemployment and its negative pressure on consumption; and justified a detailed examination of determinants of unemployment. Applying parametric and semi-parametric models on urban household survey data, the study found that marital status, highest level of education attained and age have considerable effect on hazard rate into employment. Fortunately the study found that gender has no significant effect on hazard ratio into employment and, therefore, the result could partly be helpful to assess effect of those selected determinants on urban female risk of hazard to employment. The econometric output reveals that one year increase of age decreases unemployment duration by 5.5 percent, *ceteris paribus*. It highlights that increasing of age increases the chance of being employed. People with collage diploma have shorter unemployment durations compared to secondary school graduates and show remarkable return in terms of propensity of finding job. The study would have been more helpful if the regression analysis was made for both male and female separately since, contextually, married male are socially obliged to find job for the family with whom he is living with than females.

Yakubu,A's "***Factors Influencing Female Labor Force Participation in South Africa***" made an attempt of assessing females' activities in labor market and their employment status in the society. He emphasized

7. The literatures, discussed here, are not quoted, rather revised and presented in very short summary way focusing on only points related to the thesis. Taking this in mind, I refrain from quoting them. For readers who need to see the references, the literatures title and author names can be accessed at the "reference list" chapter on page 40.

on demographic, economic and particularly education effect on females probability of finding job in South Africa. The study in general investigates labor force dynamics in South Africa, using Human Capital Theory that postulates education as a positive factor for maximizing the chance of being employed, as theoretical base of the study.

Using sample data from the 2008 Quarterly Labor Force Survey and applying logistic regression modeling on it, results show that taking no schooling as a reference, having some schooling increases the odds of female participation in the labor force. Females with primary school education have roughly two times the odd of being employed than those with no schooling at all. With increasing of level of female education, the odds of being employed are escalated substantially. The result also shows that secondary and tertiary school graduated females odds of participating in the labor force is 6.235 and 16.914 times of females with no schooling. Marital status also affects the chance of being employed. The study shows that married women have higher chance of being employed than their counterpart widowed women and, they have smaller chance of joining the labor force than their counterparts, Divorced women. Taking married women as a reference category, econometric output reveals that divorced women are 1.718 times more likely to be employed. In this study age is categorized by five years. Taking "15-19" age group as a reference category, the odds of participating in labor force increased with increasing of age groups except for age group 20-24.

Additional literature, "***Labor Force Participation of Married Women in Punjab, Pakistan***" by .Khan,R and Khan,T underlines on factors that influence the decision of married women to join the labor market. Compared to the rest of the revised literatures, this particular literature focuses specifically on married women and includes more socioeconomic, demographic and cultural variables. The study research questions are framed under the extent of effect of age, education and headship of married women on her labor force participation. The study also included the effect of infants and school-age children, and residing area of women. Employing *probit* econometric model on primary data exclusively collected for the study by a cluster sample technique, the non-linear maximum likelihood of labor force participation of married women is estimated. The general regression shows that more than 70 percent of the variation in labor force participation is explained by the determinants included in the regression. Increasing age does have a direct relationship with probability of finding job, but with decreasing rate. The econometric result shows that one year increase of age maximizes the chance of being employed by about 9.49 percent with decreasing rate of being employed by 0.24 percent. The study discusses the possible explanations why women could have small chance of being employed or couldn't find job at early young age. It stresses on social and cultural constraints that for women around young age the social constraints are tough so that Punjab's women are not old enough to break social and cultural constraints and join the labor market. The other explanation is that younger women couldn't have comparatively small number of off-spring so they prefer their leisure time and domestic non-paid work to paid labor market. The study also shows that the chance of being employed is higher for comparatively higher number of years of education. A one year increase in education increased the labor force participation by almost 8 percent with increasing rate of 0.97 percent. In a country like Ethiopia and Pakistan where educated (having skill that the labor market demands) women are quite few in number, their productivity in paid labor force is higher than productivity at domestic non paid work.

The study also finds the role of female headship on the possibility of her labor force participation from economic and social perspectives. Economic wellbeing of female headed household has been implication of dirt-poverty of the household she is taking care of. In Pakistan, the study states, women as a head of household have a good division of labor and involved in paid labor market than working non paid domestic housework. The statistical result supports the explanation. Mothers as a head of households are 3.7 times likely to join the labor force than mothers who are not head of their household. It makes the explanation clear that poverty drives family-headed women to face the labor force.

Khan,R. and Khan,T. gave attention to the number of total children and prime-age children of married woman have in their household to analysis her chance and decision to join paid labor market. It is noted in Koulovatianos,C. and Schröder,C. study, citing Browning's work, that *every aspect of household economic behavior is significantly correlated with the presence of children in the household* (Koulovatianos,C. and Schröder,C, 2007). There are two possible explanations for effect of number of children on mothers labor force participation, either the presence of children compels a mother to participate in the labor force or taking care and upbringing children obliges a mother to stay home. In a society like Ethiopia and Pakistan, number of children highlights the economic wellbeing of the household and specifically the mothers'. The study states that in Pakistan, poor households have 75 percent more children than those of non-poor households. It also highlights that mothers' decision for finding job is calculated by comparative advantage of their productivity at home and in the labor market The decision is not only affected by number of children at home, it is more affected by the presence of infant children. The presence of infants in countries where there is no paternal leave for husbands increases mothers' productivity at home. The econometric analysis supports the given explanations. A one child increase decreases mothers' chance of employment by 3.61 percent. And, the presence of children under age four decreases the probability of mother in the labor force by 2.51 percent. The effect of sex of children after age 15 is also examined. Taking the presence of prime-age children effect on consumption of household and mothers' labor force participation in to account, being male or female also affects the chance of being enrolled in paid labor force differently. It is found that the presence of male prime-age children in the household affects labor force participation of a mother negatively (-10.3 percent) and female prime-age children positively (22.29 percent). It is discussed that the presence of male prime-age children reduces the demand of women's labor. Among all determining variables included in the statistical analysis, mothers' age, educational status and presence of infant children affect her chance of being in the labor market more significantly, at five and ten level of significance, than the rest.

Finding literatures that could give contextual meaning is apparently troublesome. Nonetheless, all accessed literatures provided us with roughly the same relationship between the prominently selected socioeconomic, demographic and cultural explanatory variables; and probability of female labor force participation. Effect of education status, age and number of infant children a female have more significant (at five and ten percent of level of significance) effect than rest selected variables. The given discussions and possible explanations for the statistical findings are contextually meaningful and hypothetically plausible.

3 Theories and Hypothesis

This section has two parts, Theoretical Foundation and Hypotheses. The first part primarily presents predominantly used theories, *Traditional Neoclassical Theory of Labor Supply*, *Household Production Function of Family Economics* and *Human Capital Theory*. Next, desiring for contextual meaning, adjustment is made on the employed DHSs' to make the espoused theories applicable. Finally theoretical models are presented. The second part formulated number of hypotheses based on the discussions, literatures reviews and the theoretical models presented in the study.

3.1. Theoretical Foundations

Following the 1960's remarkably declining of wage gap in between male and female; and increasing share of female in the paid labor market, disintegration of occupational segregations, and a parallel declining in fertility rate, marriage postponement and growing of divorce rate in the western industrial world attracted sociologists, labor economists and demographers attention to investigate interdependencies and causal relationship between the labor force attachment and wage return; and demographic adjustments by household members. Especially in the 1980s and 1990s, a substantial female

labor force was apparent in the world except Africa (L.Lina 2000). Speaking of theories of labor supply, the three important and predominantly used theories are presented.

3.1.1.1 Traditional Neoclassical Theory of labor Supply

According to Pettit,B. and Hook,J. neoclassical economic theory suggests that female employment decision is result of shifts in the cost-benefit of wage relative to other pursuits including domestic labor, home production and leisure time (Pettit,B. and Hook,J. 2005). The cost and profit analysis is affected by demand for and supply of labor in the paid labor market. Focusing on supply of labor in the market, traditional neoclassical economic theory of labor supply assumes individuals as a rational actor who will aim to maximize pursuit of pleasure in life. According to the theory, the decision to participate in the labor market takes optimal allocation of time across work and leisure, all except paid-job, in mind. Time spent on work increases the earning but decreases satisfaction and non market utility from leisure. Time spent on leisure increases indirect utility from non-paid labor market but decreases direct income. Therefore, additional time on either of the two activities have opportunity cost on the other one. Stoep,V, citing Cahuc and Zylberberg's work, states that the optimal allocation time in between leisure and work is determined by prevailing market wage rate and availability of non-labor income (Stoep,V, 2008). Given income from other source is constant, the author extends, opportunity cost of leisure will be increased with increasing of wage rate and, as a consequence, labor supply will be positively affected. Increasing of wage rate also increase individuals income, that in turn purchases additional leisure time.

The fact of the matter is that the theory outwardly formulated for individuals who are already in the labor market; their wage affects their time allocation to work and leisure. The theory, however, can also be applied for individuals who are willing to join the labor market. Coming to the female employment, a female having higher time intensive work at home is less likely to enter in the labor market than a female having less time intensive work at home, holding wage return for both females equal. Likewise, a female having many children and specially infants will have high reservation wage than a female having less number of children. Therefore women with less number of children have higher chance of joining paid labor market.

The theory has, however, a number of criticisms from different point of views. First, the model fails to examine and identify the time spent for activities summed up under "leisure". The time spent on some activities by individual in a household serves interest of the other members of the household and vise-versa. By splitting leisure time in to two parts, household consumption and household production, the usual traditional neoclassical tradeoff assumption becomes wrong. Stoep,V discusses that the tradeoff between market work and household consumption misused as tradeoff between market work and household production. The fact on the ground shows that household consumption is not as good substitutable for market work as household production is. The second criticism goes to the assumption that individuals' time allocation in the household is not mutually exclusive. Taking mutual benefit of the household utility in account, household allocation of time among members is rather household decision. Tackling to those limitations, Gary Becker's pervasively influencing and applicable theory is developed.

3.1.1.2 Theory of Household Production Function of Family Economics

The 1965 Gary Becker's seminal theory states that model of household production first resolved the problem encounter in the traditional theory of labor supply by separating household production, market work and household consumption (pure leisure)(Stoep,V,2008). In the theory, instead of individuals in a family, family as a unit agent is recognized as a decision making unit on labor and time allocation on, household consumption, household production and market job. Mincer,J and Polachek.S discuss from consumption behavior point of view that consumption behavior signify particularly joint family decisions

rather than individual's decision in a family. Accordingly, they underlined individuals in a family or household are consumer units in which income is largely pooled and consumption is largely shared (Mincer,J and Polachek,S. 1974).

The theory also solves the second limitation by taking individuals division of labor as division of labor within a family. Seeking robust family income and minimize opportunity cost, family allocates each household members time in those three activities (household consumption, household production and market work) and apply differentiation of roles among members by allocating members in which they might fir best. According to the theory, differentiation of roles by differential skill and earning power among members of a family maximizes both direct income from paid market and indirect utility from household productions.

3.1.1.3 Human Capital Theory

The effect of human capital on market earning and wage rates of women is briefly discussed in Mincer,J and Polachek,S. "***family investment in human capital: earning of women***". Aiming at ascertaining and estimating the effect of human-capital accumulation on market wage return and its rate of women, deduce degree and course of education over life history of women, they build a "*Human-Capital Earning Function"* for male, seeking simplicity, and transfer the analysis to females. They found that female earning profile faces serious of discontinuity due to marriage, childbearing and childrearing periods. Applying the 1967 National Longitudinal Survey of work Experience (NSL), they describe that after marriage, women spend less than 50 percent of their lifetime in the paid labor market and most women are reported that they had serious work discontinuity that could have been affected their wage return. It is stated that life time participation in labor market differs by number of children, marital status, age and other characteristics. Unmarried woman invests her time in paid job continuously than married women and a woman with children will have worse discontinuity problems and poor work experience than a woman without children.

Speaking of labor force participation, unmarried women have better time investment in finding job than married females. However, a married woman with children faces considerable time constraint, skill depreciation and lack of motivation in looking for jobs than a single woman or married woman without children. During a period of childbearing and childrearing, a woman is likely to face depreciation of skill accumulated from school due to protracted time investment in household production than time searching for market job. The descriptive statistics in the study shows that nearly 90 percent of female participate in the labor market after schooling and 75 percent returned to labor force after their first birth. It also shows that single (never married) women invest 90 percent of their time on labor market whereas women with child spent only nearly 50 percent. However, all women having children don't respond to time investment in search of labor market job at equal momentum. Increasing of age of children decreases time investment in labor market.
Taking Becker's household labor supply theory in account, women chance of engaged in paid labor market increase with increasing of her human capital accumulation. An educated woman not only increases her productivity in paid labor market, she also limits number of children so as to lower depreciation of skill and opportunity cost at job.

3.1.2 Contextualizing Theories

Afraid of bogus results that say in opposite to the basic theoretical foundations and contradict hypotheses that are formulated based on included literatures, survey studies and theories expectations, an attempt is made to find out few points that need attention before espousing the theories, and forewords spurious results that never explain facts on the ground.

- All the given theories, stated above, inclined to show time investment conflict of women in between to household production and to earning in paid labor market. A considerably declining of wage gap among male and female in the paid labor market was an interesting motivation for researchers than labor force participation rate to study at micro-level for the fact that wide chance of employment hadn't strongly affects female to had socioeconomic and demographic responses. Given the country context, demand for labor is substantially low for paid labor market. Therefore instead of increasing of wage rate or income, finding job is considerably affected by socioeconomic, demographic and cultural characteristics that the applicants possessed.
- Literatures findings of most of the developed countries are consistent with human capital, neoclassical and especially household production function theoretical expectations. However, many developing county literatures are inconsistent to those selected theories and theoretical expectation. Econometric results of those literatures usually show relation in between, lets say, motherhood, number of children and marital status. Stoep,V. specifies that the literatures on developing countries mostly show inconsistent signs as well as results. She states that even if a clear negative relationship exists, there usually exists a statistically insignificant relation. This could be due to using "labor force participation" with "employment" in labor market interchangeably. In developed countries, it is common to use those words interchangeably due to inconsiderable difference in between employment and labor force participation. Coming to Africa and particularly Ethiopia, using employment and labor force participation interchangeably hurts sign and significance of econometric analysis of studies.
- In Ethiopia context, all people reported as employed in different surveys and datasets are usually people in different activities regardless of earning (salary) type, including working for free. Taking both 2000 and 2005 Demographic and Health Surveys as example, both female working a seasonal (two to three months) non-paid job and female working in paid labor market are labeled as "employed". It becomes worse when on average more than 80percent of "employed" female are non-paid seasonal agricultural workers. As a result, applying household labor supply theory to study, for example, effect of age of children and number of children a woman has; or effect of age or marital status of a woman on probability of being employed gives spurious results. No matter how many children or infants a female have; or divorced with her husband, assumptions of substitution and income effects doesn't have a grounded reasons. Maximizing time on the two or three month seasonal work in non-paid labor market neither depreciates skill she accumulated nor increases opportunity cost of being on the work.
- Taking care of children in agrarian society where neighborhood understand itself as a responsible for child-care of the other, cost of childcare is almost null and social and cultural values of many children is as likely resembles to household family doesn't seriously affects market job. Cultural and social institutions facilitate childbearing even if a female have a job for pay.

I, therefore, made adjustment on the datasets so as to make the theories plausible and relevant to the given context. The adjustment solved serious problems that would have been encountered, had the points listed above were not taken in to account[8]. As a result, espousing theoretical foundations from developed world literatures became relevant.

8. the adjustment I made on the datasets to tackle the mentioned problems is clearly explicated in ***Chapter four Dataset section.*** *Here is the short description: focus my target population on females residing in urban area, where cost of children (opportunity cost) is relatively higher, by far, than cost of children in urban areas. I also include only respondents who are not working by the time of the interview as "not-employed" and those who are working in paid labor market, paid in cash and, in cash and in kind as "employed". In doing so, those females who are reported as working for free and paid in kind are excluded. Concerning working period, females who are working for all time periods except seasonal works are included. I prefer to include working for money and in kind together with working for money since even if the proportion of money is not explained in the dataset; it is supposedly higher for people residing in urban parts of the country.*

3.1.3 Theoretical Model

A literature, "***Female Labor Force Participation in Ghana: the Effect of Education***" by Sacky,A. discusses a utility function of women. Modifying and presenting as a utility function of a family helps the theoretical formulation to elaborate more.

A woman utility can be redefined as a derivative of household labor supply function (household production, household consumption and market income from the household). Her chance of being employed or participating in paid labor market is influenced by her socioeconomic (education, her husband education, her husband occupational status and poverty level), demographic (age and marital status) and cultural (number of children, number of children under five years old, age at first marriage, age at first childbirth and religion) characteristics, assuming there is no indirect income generating member in the household. Sacky,A discusses, after summarizing human capital models and related theories, that female labor force participation is influenced by women's productive opportunities as determined by her educational status, presence of children, social environment and her non human capital assets (Sacky,A. 2005).
Interweaving the above theories, discussions, econometric analysis and econometric findings helps to develop seemingly theoretical models that measures and defines effect of socioeconomic, demographic and cultural determinants on likelihood of female employment in the paid labor market.

3.1.3.1 Socioeconomic model

Socioeconomic characteristics affect individuals' propensity of finding job and economic wellbeing in labor market. In a context where demand for labor in paid labor market is narrow but equally open for males and females, competitive usually fit socioeconomic characteristics that the labor market demands. A socioeconomic model is built to examine the effect of Educational status of the respondents in the sample datasets, their husband's educational status, their husband's occupational status and their wealth (poverty) status on likelihood of finding job in paid labor market. Among those predictors included in the model, education status of a female does have strong and direct effect on probability of finding job in paid labor market. Higher education status connotes better chance of finding job, holding other factors constant. Effect of husband education and occupational status affects but indirectly through time allocation, family decision in labor division, increasing information links and likes. A female who married a husband having higher occupational status either increases her chance of finding job by increasing access to her networks in working areas, increasing her time to find jobs, sacrificing his leisure time too or decrease her chance by maximizing his wage returns and increasing working time and let her maximize the household utility by letting her devoted to household productions including social practices. Both husband education and husband occupation effect is intrinsic and explained indirectly. Therefore, the degree of the influence on female employment is considerable at when husband education and /or husband occupation is at higher level. In order to capture effect of husband education and husband occupation status, the socioeconomic model is build considering all except unmarried females.

3.1.3.2 Demographic Model

Speaking of demographic backgrounds, age and marital status are included in this partial model to study whether finding job in paid labor market is different for different females with different demographic backgrounds, age and marital status. Increasing of age increases the chance of being employed in paid labor market through increasing fitness to working environments. Females are better to break social and cultural constraints and join the paid labor market with increasing of age. Marital status also explains propensity of finding job in paid labor market. Married women are more exposed to household production including upbringing of children than single females who never experience marriage. Divorced females

most likely join paid labor market than married since, increasing income from labor market would be mandatory, in most cases. When married women specialize in household production and their husbands generate income from paid labor market, divorced female is supposed to find job and, the household decision a divorced female made, she would find her self best at paid labor market.

3.1.3.3 Culture Model

In the cultural model the rest variables, total number of children, number of children under five years old, age at first marriage and age at first child birth are examined as predicting variables of employment. Number of total children and children under five years old are included in the culture model, rather than in the demographic model, for the fact that in the context where number of children is extended up to sixty, the variables explains cultural practices and values and, are more defined as culture variables.

Effect of childbearing and childrearing has been a great concern in the area, since it is relatively time consuming task in household production that potentially affects female employment and earning too. Number of children and age of children consume time and goods of a household (a family), differently and, as a result, time allocation to child care is different with number and age of children. A woman having a child or children will have strong time constraint of maximizing her education level and; searching and finding job than women who have no child or few numbers of children. Again, a woman having infant takes considerable time to take care her child since the time to take care the child couldn't be substituted by market goods. Therefore, availability of younger children lowers probability of finding of job of a mother than a mother with relatively older children (Stoep,V. 2008). Growing of children also benefits household production by sharing labor and time to the family. In Ethiopia, children have key role in producing household commodities, cleaning, keeping home, cooking and child caring too. Therefore, a mother time in domestic non paid job will decrease with increasing of age from infant age to school age group. A mother who is upbringing school-age children not only be free of child care, she also gain time to spend on searching for job and accumulate education and trainings suiting to finding job. Researches in developing countries indicate that young daughters are used to take child care and mothers, as a result, become free for market work (Lokshin,M. Glinskaya,E. and Garcia,M. 2000).

Mincer,J. and Polachek,S.'s Human Capital Theory analysis studies time investment of a woman in life history by compartmenting the whole life trend after schooling. It divides on the major points, since after school to marriage, marriage to first child, and first child to back to job etcetera (Mincer,J. and Polachek,S, 1974). The study, nonetheless, fails to analysis the effect of timing of marriage and timing of child birth in detail. Therefore drawing common assumptions on effect of timing of those pivot points on wage return/ employment help the analysis well.

Time period after school to first marriage privileges higher time investment than time investment on finding job after marriage. This is due to the fact that many Ethiopian female are used to leave their parents house when they got married. Work differential and time investment in household production when a female were a daughter is much less than time investment when a female is head or wife of a household. Early marriage narrows time investment on education as well as on finding job. The second reason is that marriage and having a family damps huge social and family responsibility too. And for woman, being a married one is one means of way out from being dependent from parents to dependent on her husband. With such expectation, early marriage kills motivation of finding job. When first child follow early, it becomes worse.

Coming to religion, there is no available independently studied research in Ethiopia that seeks effect of religion on female employment or economic wellbeing in general. There is no direct effect of religion affiliation on employment status. The influence is, however, intrinsically explained by level of education, number of children and traditions, social and cultural practices and values that the female possesses in

associating with her religious affiliation. For example Muslim girls marry early than Christian girls. Education status of Muslim girls is much lower than education status of Christian girls. Muslim husbands also understand their wives as born to domestic non paid work including childbearing and childrearing.

3.2 Hypotheses

1. ***Educational Status***

Higher level of education expands chance of employment in paid labor market

Female with tertiary education will undoubtedly have higher chance of finding job than a female with lower educational status. A female with secondary school also has higher chance of finding job than a female with primarily education. A female having no education would have smallest chance of being employed in paid labor market.

2. ***Husbands' education***

Husband educational status determines chance of being employed positively.

3. ***Husband Occupational Status.***

Husband's occupation status determines females' chance of being employed in both directions

Husband's occupation status either increases propensity of females chance of being employed in paid labor market by increasing her economic wellbeing that in turns increases her educational status or skill that increases her competitiveness in labor market or, the husband prefer his wife to stay home and take care of social and domestic activity that in turn increases household utility. However, regardless of the direction of the effect, since its effect is intrinsic, the influence could be inconsiderable.

4. Poverty

Decreasing of poverty level increases female chance of employment in paid labor market.

Poverty determines education status and exposure that helps a female to find job in paid labor market. With decreasing of poverty, education status and information increases. Serious poverty also doesn't give time to wait opportunities to find job that has payment in cash.

5. Age

Increasing of age increases the chance of being employed in paid labor market

Increasing of age does have a positive relationship with probabilities of finding job. This could be due to a parallel growth of experience, decreasing of time in childcare and increasing of share of household production by other family members.

6. Marital status

Single (unmarried) females have higher chance of being employed than married and divorced females. Like wise, propensity of being employed in paid labor market is higher for divorced females than for married females.

7. Number of children

A woman with high number of children have less chance of being employed than a chance of being employed for a woman with relatively few number of children.

8. Children under age five

A mother with few numbers of under- five years of children has relatively higher chance of finding job in paid labor market than a woman with relatively greater number of under five years children.

9. ***Age at marriage***

Early marriage decreases the chance of exposure to work, invest time on job and update or utilize skill already accumulated during school or training time. Age at first marriage affects her chance of being employed.

10. Age at first child birth

Like early marriage, early child birth decreases the chance of finding job in paid labor market. Holding all other factor constants, increasing of age at first birth increases the chance of finding job.

11. Religion

Christian females are expected to have higher chance of employment in paid labor market than their counteract Muslim females

4. Data and Dataset

4.1Data Source

Both cross-sectional survey data, 2000 EDHS and 2005 EDHS, are downloaded from ***Measure DHS*** online database[9]. ***Measure DHS***, nearly 27 years old technological assistance provider for 84 countries for the implementation of 240 surveys (including Malaria Indicator Surveys, Service Provision Assessment Surveys and DHS with IHV testing Surveys), provided me with a quality approved survey data authenticated by both data provider countries and international organization including USAID, organization that is funding ***Measure DHS*** too. ***Measure DHS*** is only responsible to assure the quality and reliability of the data forwarded from countries to dispatch worldwide. Even though the data is downloaded from ***Measure DHS***, the surveys are implemented by ***Central Statistical Agency (CSA)*** in collaboration with ***Population and Housing Census Commission***-now merged with CSA- and sponsored by ***Ministry of Health of Ethiopia***. The employed surveys are the only available DHS surveys so far.

4.2 Dataset

Despite of the fact that the need to prepare DHS surveys was to up-to-date information for concerned scholars and institutions primarily about demographic and health status of the country, I found both surveys reliable and appropriate to analyze the socioeconomic, demographic and cultural determinants of female employment. Concerning my research question, regardless of size of the dataset, both DHS data served me equal. The main difference in between the two surveys is that the 2005 DHS includes "***testing" for prevalence of HIV and anemia*** which has got nothing to do with this thesis.

The downloaded survey datasets are organized separately so as to let researchers, policy makers, planners, program managers and all interested individuals or organizations easily retrieve and use the data they consider appropriate for their researches. Among all surveys datasets, I used female respondents' information on their socioeconomic and demographic profile. All respondent in both surveys are in working age, 15-49, from different ethnic groups, residing areas, regions, religions and different socioeconomic, demographic and cultural backgrounds. In the first dataset, there are 39,881 respondents and in the second dataset, there are about 14,070 respondents. In the process of building two new sample datasets from the two DHS datasets twelve variables are recruited for each of the sample datasets.

9. Online database for measure DHS is: http://www.measuredhs.com/accesssurveys/ . Downloading the available survey data is only possible after the user creates account (sign up) and send request of the interest area. The page is easily accessible and easily leading as well.

For the very reasons stated in chapter three about "*Contextualizing Theories*" the new datasets have much lower observations than the original datasets (Foot note on page 14). Firstly, unlike the survey area coverage, the study focuses on urban parts of the country. Secondly, all respondents who are labeled as "employed" in the original datasets are not "employed" in the study. As stated earlier, in this study "***employed****" are only those who are working in paid labor market for cash and, for cash & in kind.* Such screening decreased the observation in the first dataset to 6,358 and in the second dataset to 4,209. From the dataset, it is found that in the 2005 DHS dataset only 17.8 percent of the total 14,020 respondents reside in urban parts of the country. The 2000 DHS also reveals that approximately 17 percent of the total female respondents, 39,881, reside in urban areas.

Rescreening by type of payment downsizes the sample datasets. Respondents size in the sample dataset after adjusting for females in working age group live in urban parts of the country, unemployed and employed for payment of cash and cash & cash-kind is 6358 for 2000 and 4209 for 2005. Note that now on, the sample datasets are labeled as 2000SD for sample dataset from the 2000DHS and 2005SD for sample dataset from the 2005DHS. This makes the study readable.

5. Methods

5.1 **Variables and Variable Descriptions**

I take on dominantly used variables in the area by different literatures, publications and survey studies. Those variables are selected primarily based on their effect of strength and theoretical assumptions. Context also has strong influence on recruiting some of the selected variables. Employment status of the respondents is endogenous variable and the rest eleven variables are explanatory variables.

In socioeconomic variables group, *education, husband education, husband occupational status* and *poverty* are selected. In demographic variables group, *age* and *marital status* are selected. In cultural variables group, *number of children, children under five years old, age at first marriage* and *age at first child birth* and *religion* are selected.

Next, the selected variables descriptions are presented. Note that for the sake of avoiding repeated descriptions, I included descriptive statistics of the 2000 survey sample dataset (2000SD) with corresponding variables. Since modifications and variable descriptions are basically identical for the two sample datasets, I only discuss about the 2000SD variables to serve for the 2005SD too. The 2005SD variables descriptive statistics, summary and distributions, are tabulated and presented next to the variable descriptions.

5.1.1 Dependent Variable

Employment status

The endogenous variable in the study is employment status of female respondents in urban parts of the country in working age, 15-49. If those females respond that they were engaged in any labor activity for pay, in money and in kind & money, for non-seasonal period, they are taken as "*employed*" and "*Not-employed*" if they responds that they were not working by the time of the interview. The rest, responded as working for free and working for payment in kind are assumed in this study as neither employed nor not employed. Those observations, therefore, are not recognized in the econometric analysis as are not recognized in the discussions and excluded from the sample datasets. The table (below) shows that in the 2000 original survey, nearly 27 percent of the total respondents was reported as employed and nearly 73 percent were reported as non-employed. When the dataset is adjusted by payment type, the share of employment decreased to almost 15 percent, non-employed increased to around 85 percent. This is due to

the fact that female working for free are not considered as employed. However, coming to urban residents portrays new picture. Percent of employed women in urban area increased to approximately 40 percent and share of not-employed decreased to almost 60 percent. In the 2005 survey, 70.55 percent of the respondents reported as not-employed and 29.45 percent of the respondent reported as employed. Applying the same adjustment, Not-employed respondents share increased to 79.48 percent and "*employed*" downsized to 20.52. Analyzing urban female respondents, the share of employed respondents increased to 38.82 percent and share of Not-employed respondents decreased to 61.18 percent. The declining share of employed respondents in country level and inclining in urban area supports the justifications given in previous section, *Contextualizing Theories* foot note.

2000 DHS			**2005 DHS**		
Employment	**Frequency**	**Cumulative**	**employment**	**Frequency**	**Cumulative**
Not-employed	29,078	72.91%	**Not-employed**	9,924	70.55
Employed	10,784	100%	**Employed**	4,143	100%
2000SD			**2005 SD**		
Employment	**Frequency**	**Cumulative**	**employment**	**Frequency**	**Cumulative**
Not-employed	3,815	59.99%	**Not-employed**	2,575	61.18
Employed	2,544	1000%	**Employed**	1,634	100%

Table One: the original datasets employment distributions and the sample datasets employment distributions (adjusted). Source: tabulated taking variable "employment" from 2000 EDHS, 2005EDHS, 2000SD and 2005SD.

5.1.2 Explanatory Variables

5.1.2.1 Education Status

Education status of the respondents is one of the foremost influencing factors of female employment status. The maximum number of years of education of respondents attained until the time of the interview is recorded in the DHS datasets and I recruited and categorized the variable as "*education level*". The original datasets don't have respondents' educational status by level. Rather, the respondents are requested the maximum number of years of education they have. Econometrically speaking, the optimal output from this information we may scratched is only to know the magnitude and direction of effect of increasing of education by one year on the probability of finding job in paid labor market, holding all other factors constant, if we used the variable data without modification. Understandably, however, increasing of one year education, let's say from grade 4 to 5 or from grade 10 to 11, doesn't seem to add value on propensity of finding job. In fact, it shows aggregate average effect. In light of that, the variable is categorized and changed from numeric to categorical based on national education system. It is categorized as "*no education*" for no-formal education, "*Primary*" for grade 1- grade 8, "*Secondary*" for grade 9- grade 12 and *"Tertiary"* for 13 and above years of education. Taking, let's say, "*Uneducated*" as a reference category, it is analytically plausible to compare probability of employment for the rest of the categories[10].

10. Analyzing the effect of education is a matter of preference. The usually recommended way of taking either average (mean) value of the groups and label as certified for that particular group or not has its own potential problem specially in a case where education distribution is strangely down sized. Were not the case, result would have been more improved as there could be considerable difference between a female who complete, suppose, grade 8 and grade 7, unlike insignificant d/c b/n grade 5 and 6 or, it could be grade 6 and 7. However, females in their category have higher preference in paid labor market than females in a below category much higher than the earlier assumption, that grade 8 is higher than grade 7. The left-skewed distribution of education also downsize effect and distribution of education. In a case where the central tendencies pointed to primary school, effect of secondary and tertiary education, specially for uncompleted, would be negligible which is contrary to the context where education pay off is relatively higher. This is the very same case for Husband Education too.

The 2000SD shows that nearly 45 percent of the total respondents are not educated. 21.56 percent and 28 percent of the respondents have primary and secondary educational level, respectively. The rest 5.5 percent of the respondent have tertiary education. The statistics also reveals that about 38 , 20, 31 and 10 percent of the employed respondents are not-educated, primary, secondary and tertiary level. Whereas among all unemployed respondents, nearly half of them are uneducated and 22.67 percent of them are in primary school level. The rest 26.21 and 2.25 percent unemployed respondents have secondary and tertiary educational status. The Summary statistics shows that respondents' educational status is on average Primary level with 0.972 level of divergence.

5.1.2.2 Husband's Education

Husband education is selected as one of the socioeconomic variables to see its effect of females' chance of finding job in paid labor market. The variable description is the same with the description given for "*education status level*" of the respondent. Using the same technique, the variable is changed from numeric to categorical and named as "*husband's education*" in the same way I made for respondents educational status.

The descriptive statistics of *husband education* from the 2000SD shows that 28.03 percent of the respondents' husbands are not educated. 21.49, 38.65 and 11.82 percent of the respondents' husbands have primary, secondary and tertiary educational status, respectively. A cross tabulation of *employment* and *husband education* also demonstrates that nearly 24 percent of the total employed respondents' husbands have no any formal education and about 20 percents of them have primary education. Nearly 42 and 14 percent of the total respondents' husbands have secondary and tertiary education. The reverse distribution, *husband education* across *employment* highlights that the share of employed respondents increased with increasing of respondent's educational status. It increased from almost 34 percent from primary level to 36 percent from elementary level. The share soared to about 44 percent for respondents whose husbands' higher level of education is secondary level. Among respondents whose husbands are in tertiary level, about 46 percents are employed. Summary statistics also shows that on average, respondents' husbands' educational status is skewed to secondary education with 1.011 level of dispersion.

5.1.2.3 Husband Occupation Status

For the same reasons listed in ***marital status*** section (page 23), ***husband occupation*** is categorized in three parts. Occupations at the higher hierarchy, professional, are categorized as "*high*". Clerical, sales and service, occupations lined up next to professions and labeled as "*middle*". Skilled and unskilled manual work; and agriculture are summed up and listed as "*low*" level occupations. The rest whose husbands hadn't been working by the time of the interview are labeled as "*not working*".

Descriptive statistics of distribution of husbands' education by category shows that all except about 2 percent of the respondents' husbands were working by the time of the interview. 42 percent and nearly 36 percent of the respondent's husbands were working in poor and middle level occupations. The rest nearly 20 percent of the respondents has husbands who are working in the higher level of the occupational statuses. Cross-tabulating distribution of ***husband occupation*** and ***employment*** shows that among "*not working"* category, 65percents of the respondents are not working and the rest 35 percent are employed in paid labor work. 57.5 percent of the total respondents whose husbands are working in low working class are not employed and the rest 42.5 percent are employed. Among those who are working in middle and high level of occupational statuses, 63 ad 61 percent of the respondents husbands are now working. The rest nearly 37 and 39 percents are employed, respectively. The distribution of "*husband occupation*" across *not-employed* is typically opposite to the distribution of *husband occupation* across employed.

Studying the distribution among *employed* portrays no picture that shows a direct or inverse relationship in between husband occupation and employment status.

5.1.2.4 Poverty

Poverty is a decisive factor that has always been affecting female's employment status. Series of literatures found that the extent of poverty (wealth) explains not only females' job opportunity; it affects the type of payment paid for working females. Screening the "*type of payment*" to only "*payment for cash"* and "*payment for cash and in kind*" filters the entrants too. I can't find better indicator of poverty status of respondents from the original survey datasets than a variable "*wealth*" can do. It is also hardly possible to merge from other data sources. The variable has five categories, *richest, rich, middle, poor* and *poorest* according to the respondent's economic wellbeing. Just flipping the orders of the categories of the variable up side down provides a variable measuring poverty level of the respondents from highest to lowest. Then, the variable became new variable "***poverty"*** with three categories by summing up the two extreme categories, highest and lowest with their adjacent categories, high and low, respectively.

Statistics from the sample dataset shows that more than 95 percent of respondents are *rich*[11]. The rest nearly 5 percent of respondents are *rich* and *middle*, together. Distribution of respondents by their poverty and employment status shows that percent of employed respondents increase with decreasing in poverty status. Among the total respondents who are living with high poverty status, 87percent are not employed and nearly 13 percent were employed in paid labor market. The share employed increases to nearly 19 percent and the share in unemployed, on the other hand, decreases to about 81percent among respondents in middle poverty level. Among respondents in high poverty status, 41 percent are employed and 59 percent are not. The crosstab shed a light on that there is an inverse relation in between poverty status and probability of being employed.

5.1.2.5 Age

Age is one of the foremost demographic variables that are presumed to influence female employment status in paid labor market. Taking all other factors constant, urban females with different age are expected to have different chance of employment in paid labor market. All females in the study are in working age group, 15-49. The variable is included in two forms, number of years since born to asses a yearly effect and age in five years age group (it is categorized as 15-20, 21-25,… ,45-49) see abridge age effect.

Descriptive statistics of the 2000SD shows that percent of employed respondent increases with increasing of age. The table, depicted below, shows that percent of respondents who are employed and not employed increases strictly in the first three age groups. When the percent of *not-employed* starts to show a slight decline until for respondents in age group 30-34, share of employed respondents keep increasing and attain its climax in age group 35-39 and stated to decline for the next two age groups. The percentage of *not-employed* female also increases, linearly; for the first two age groups, 15-19 and 20-24. It, then, shows increasing in age group 35-39. The roughly similar trend in both percents leads to oversee the ratio of employment to unemployment throughout the age groups. It highlights females' chance of being employed increases with increase of age.

11. The wealth distribution is highly skewed to the right (richest and rich). This is relative figure! In both DHS all respondents' wealth status is reported considering rural and urban residents all together. In the 2000DHS, about 69percent of the respondents are rural dwellers and the rest about 31 percent is living in urban areas. Cross tabulating poverty and residence makes the puzzle why 95percent of 2000DS have low poverty status crystal clear. The tabulation shows that among the total of 17,282 poorest respondents, 17,153 respondents are from rural and 129 respondents are from urban parts of the country. Coming to the rich and richest respondents, among the total of 15, 960 respondents, 6,491 and 9,467 respondents are from urban and rural parts of the country. The bottom line is that the figure (95%) doesn't show that 95% of the urban respondents are rich when we think of them alone!

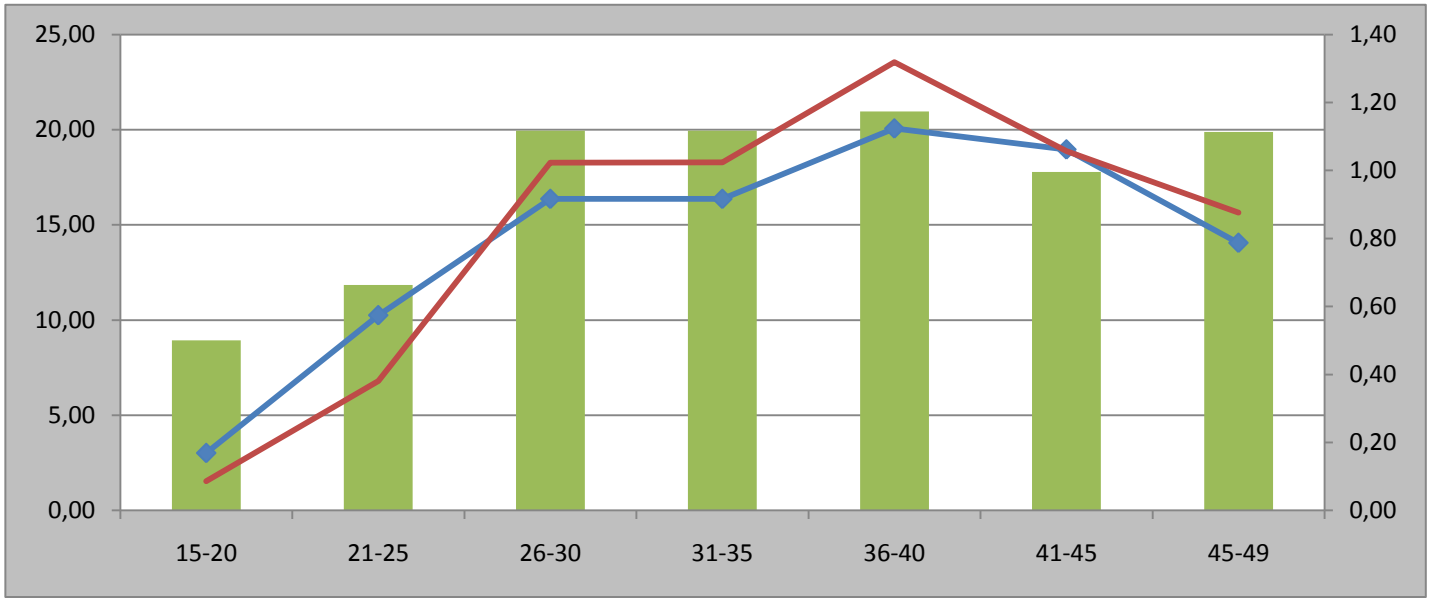

Figure Three. Percentage of employed (solid), unemployed (solid with dots) and ratio of employed to unemployed (bar graph) females over working age group, 15-49, abridge by five years. Source: constructed from 2000SD.

5.1.2.6 Marital Status

Marital status is widely used demographic characteristic in both female employment and income studies. Women employment status is strongly expected to be influenced by their marital status, holding all other factors constant. Primarily the variable "***marital status***" in the DHS datasets contains six categories. In the new sample datasets, the variable is merged to have only three types of marital statuses. One reason is seeking simplicity and following similar trend with most of the literatures in the area. Following the common trend also makes the study helping as reference in similar studies. It also makes the analysis plausible both analytically and econometrically. Therefore, I summed up "*living together*" and "*married*" as "*married*". Contextually, from household consumption and production perspectives, living together and being a married have no considerable difference in both production and consumption; and time investment on activities[12]. Certification of marriage doesn't bother the thesis. Likewise, I added "*widowed*" with "*divorced*" and "*not living together*" with "*never married*". The new "***marital status"*** in the sample datasets, then, has three categories, "***never married***", "***married***" and "***divorced***" and tackles the problems mentioned above.

Descriptive statistics of the 2000SD shows that 6.01, 74.43 and 19.55percent of the total respondents are never married, married and divorced, respectively. 40.47percent of never married, 65 percent of married and almost 46 percent of divorced females are employed and, 59.5 percent of never married, 34.74 percent of married and 54.06 percent of divorced females in the given sample dataset are unemployed.

12. Contextually speaking, "living together" for male and female is usually not different from marriage in household production theory perspectives. If a male and female are living together, they are most likely waiting for or postponed their marriage due to it could be economic or social and cultural reasons as long as they are living together in urban Ethiopia unemployed or working in paid labor market, then theoretical assumptions discussed in theory of household production function and human capital theory are met. If a woman is divorced or widowed she is nearly equally challenged by labor supply in household production and/ or in labor market. The country context gives nearly the same Roughly the same explanation for unmarried and not living together too.

5.1.2.7 Number of Children

One of the foremost determinants in female employment and success in the labor market, in terms of social mobility and economic integration, is the ***number of children*** a woman has. The 2000DHS dataset shows that the minimum and maximum number of children registered as children ever born are one and sixty respectively. For the same reason given for ***"age"***, the variable is categorized as number of children from one to three, four to six and; seven and more than seven. Taking number of children from one to three as reference category, econometric findings provides us with more meaningful analysis on change in probability of finding job for mothers having four to six and seven and more children, respectively.

The 2000SD shows that 35percent of the total respondent have maximum of three children. The rest 39 and almost 26 percent of the total women have four to six; and minimum of seven children, respectively. Crosstab of *employment* and *child-category* from the 2000SD also shows that among mothers having a maximum of three children, nearly 55 percents are unemployed and the rest 45 percent are employed in paid labor market. Approximately 61 percent and 39 percent of mothers with 4-6 children are not-employed and employed in paid labor market, correspondingly. Among mothers with more than six children, the total of roughly 66 percent and 34 percent are not employed and employed, respectively. The crosstab discloses that the more children a woman have, it seems hard for her to get a job in paid labor market.

5.1.2.8 Children under five

Not only number of children, age of children also influence propensity of mothers' employment opportunity in paid labor market. Increasing of child age decreases child care time. It in turn increases her time investment in finding job in paid labor market. Increasing of children age to prime-age group decreases mothers' time for household production. The numeric variable, ***children under-five,*** is changed to categorical variable by summing up all except no under-five children in one group to see the change in likelihood of employment between females having and not having under-five children.

The 2000SD statistics shows that nearly 47 percent of the respondents have no less than five years old age children. The rest is accounted to have a maximum of four years of children. Cross tabulating *children under-five* and *employment* shows that 45 percent of females who have no under-five child are employed in paid labor market and the rest 55 percent are not employed and, 64 and 36 percent of females who have under-five children are employed and not employed. Crosstab of ***employment*** and ***children under-five*** also shows that almost 43 and 57 percent of unemployed females have no and, maximum of four children and minimum of one child, respectively. Nearly 53 and about 47 percent of childless females and mothers with child (children) less than five years are employed. The descriptive statistics underlines that many women devoid of children are employed in paid labor market than those women with one to four children.

5.1.2.9 Age at First Marriage

Two of the important lessons embedded in Mincer,J. and Polachek.S's ***"family investment in human capital: earning of women"*** are effect of first marriage and first childbirth on the life time investment of women in the labor market (Mincer,J. and Polachek,S. 1974). ***Age at the first marriage*** determines age of entry to more responsibility in household production. Since the time a female becomes married, her role in household production function is usually higher with higher responsibility compared to the time she was with her parents sharing relatively lower time investment in household production. Marriage is also one way out for most females to find husband where their differentiation role in the new family could maximize the maximum utility of the family. In Ethiopia early marriage is not uncommon and its effect on propensity of finding job of those females who married at early age is explicit. "***Age at first marriage***"

is recruited as one of cultural variables in the sample dataset and, the variable is changed to categorical variable.

The summary statistics shows that minimum age at the first marriage is eight and the maximum is at thirty-eight years. Average respondents age at first marriage is around 16.63 years old with four years of level of dispersion. The descriptive statistics also shows the percentage distribution of respondents by *age at marriage*. Age at first marriage of 46.5 percent of the total respondents ranges from eight to fifty. Those of who married in age group sixteen to twenty contribute 38 percent of the total respondents. The rest 10.7, 2.5 and 2.7 percent of the total respondents married at age groups, 21-25, 26-30 and 31 and above. Crosstab of distribution of age at first marriage over employment shows that with increasing of age at first marriage the chance of being employed in paid labor market increases. Only 36.69 percent of the females married at their age less or equals to 15 are employed. The percent of employed females increased to 40.41 for women married at their age 16 to 20. The share again increases from 46.56percent for females married in age gap 21 and 25 and steadily inclined to 47.83 for females married at their age 26-30. Finally, highest share of employment (61.81) is attained among females married at their age greater than 30. The share, nonetheless, of not-employed decreased with increasing of age at marriage from 63.31 to 53.44 and dropped to 38.19 for females married in age group less than 15, 21-25 and, 31 and more , respectively. the percentage share of employed and not-employed female with age shows that increasing in age at marriage widen the chance of employment in paid labor market widely.

5.1.2.10 Age at first child birth

Age at first child birth is included as one of cultural determinants that are presumed to affect females' propensity of employment in the paid labor market. Early child birth, like early marriage, if not worse, could explain that time investment to find job in paid market become short and, in most cases, education status of females who give child at their early age is not helping enough to win competition of finding job in paid labor market. Under normal assumptions, early child birth is consequence of early marriage with increasing of domestic role that makes skill and labor differentiation asymmetrically favoring husbands who are hardly good at childrearing, in the country context. The respondents' ***age at first child birth*** is extended from less than 15 years old to 38 years old. And on average, they gave first child at 18.5 years old with nearly 4 years of level of dispersion. Categorizing the variable is applied as done for many of the variables.

The descriptive statistics of the variable declares that 22.5 percent of the respondents in the dataset gave first birth at maximum of 15 years old. Half of the total respondents (51.5 percent) gave their first child at their age 16-20. 20.2, 5 and 0.8 percent of the total respondents gave their first birth at their age 21-25, 26-30 and 31 and more. Crosstab of ***age at first child*** and ***employment*** shows that proportion of employed respondents keep growing until respondents whose age at first child birth is in age group 21-25. 36.34 percents of females who gave first child at their age 26-30 are reported as employed in the paid labor market. In age group 31 and above, the percent of employed respondents elevated to 70.37. Not employed respondents by age group at the time of the interview trends perfectly opposite to the employed respondents but with different percentage share.

5.1.2.10 Religion

Religion is included as a cultural variable to analyze the effect of difference in religion on propensity of finding job in paid labor market. Christian and Muslim religions are the largest and dominant religious institution, in terms of number of followers and years since they are adopted. Unlike Islamic religion, there are three kinds of Christian religion institutions in the country namely Orthodox, Catholic and Protestant (any kind). Taking bible as a common doctrine and, relative similarity in social, cultural and

religious practices base for all Christian religions, I summed up the three religions as *Christian*. In the variable "***religion***" respondents are now categorized as *Christian* and *Muslim*. I excluded "*traditional and others*" from the sample dataset for the fact that only 14 (1.134%) of the total (1,041) respondents whose religion is recorded as traditional and others were in urban parts of the country.

The sample dataset tells that almost 60 percent of the respondents are Christians and the rest 40 percent are Muslims. Among employed respondents, 78.3 percents are Christians and 21.4 percent are Muslims. 66.4 And 33.6 percents of unemployed respondents are Christian and Muslims respectively. Nearly 56 and 44 percent of the Christian respondents are not-employed and employed in the paid labor market, respectively. And, among Muslim religion followers, just about 70 percent of the total respondent in the sample dataset are not-employed and the rest 30 percent were employed. The descriptive statistics give a clue that Christian females are closer to paid labor market than their counteract Muslim females.

5.1.3 Summary Statistics[13]

Variables	Obs	Mean Std.	S.dev	Min	Max
Education	***4209***	***1.363982***	***0.9272977***	***0***	***3***
Husband Occupation	***2206***	***2.518132***	***1.762133***	***0***	***3***
Husband education	***2206***	***1.715388***	***0.806014***	***0***	***3***
Poverty	***4209***	***2.972915***	***0.209626***	***1***	***3***
Age (number)	***4209***	***26.86315***	***9.27002***	***15***	***49***
Age(category)	***4209***	***28.78807***	***8.82456***	***20***	***49***
Marital Status	***4209***	***0.601019***	***0.6771019***	***0***	***2***
Age at Marriage	***4209***	***24.88691***	***6.58305***	***15***	***31***
Age at F bith[2]	***2007***	***21.38515***	***4.465402***	***15***	***35***
Children Under 5years	***4209***	***0.7113329***	***1.277201***	***0***	***4***
Children Total	***4209***	***1.989309***	***2.35706***	***0***	***16***
Religion	***4209***	***1.220532***	***0.4146549***	***1***	***2***

TableTwo: The 2005SD summary statistics of all explanatory variables included in the study. Source: Calculated STATA output of 2005SD.

13, Some of the variables summary statistics are redefined to have numeric representation then make the statistical analysis possible. For education and husband education, 0= no education, 1= primary, 2= secondary and 3= tertiary education. for husband occupation, 0= no occupation 1= poor 2= middle and 3= high level. For poverty, 1= high 2= middle and 3= low poverty level for marital status, 0=not married, 1= married and 2= divorced, and for religion, 1= Christian and 2= Muslim.
- Note that the number of observation for husband education, husband occupation and age at first birth is quite smaller than the for the rest variables due to characteristic difference in respondents. Those who never married can say nothing about their husband education, for example.

Variable	Category	Frequency	Percentage	Cumulative
Education	0	***1,001***	***23.78***	***23.78***
	1-8	***996***	***23.66***	***47.45***
	9-12	***1,891***	***44.93***	***92.37***
	12+	***321***	***7.63***	***100***
	Total	***4,209***		
Husband Education	0	***480***	***21.76***	***21.76***
	1-8	***428***	***19.4***	***41.16***
	9-12	***981***	***44.47***	***85.63***
	12+	***317***	***14.37***	***100***
	Total	***2206***		
Husband Occupation	Not-working	***39***	***1.77***	***1.77***
	Low	***1,002***	***45.44***	***47.21***
	Middle	***711***	***32.27***	***79.48***
	High	***453***	***20.52***	***100***
	Total	***2206***		
Poverty	Low	***37***	***0.88***	***0.88***
	Middle	***40***	***0.95***	***1.83***
	High	***4,132***	***98.17***	***100***
	Total	***4,209***		
Age (Category)	15-19	***1,409***	***33.48***	***33.48***
	20-24	***865***	***20.55***	***54.03***
	25-30	***678***	***16.11***	***70.14***
	30-34	***425***	***10.1***	***80.23***
	35-39	***387***	***9.19***	***89.43***
	40-44	***284***	***6.75***	***96.17***
	45+	***161***	***3.83***	***100***
	Total	***4,209***		
Marriage	Not-Married	***2,139***	***50.82***	***50.82***
	Married	***1,61***	***38.25***	***89.07***
	Divorced	***460***	***10.93***	***100***
	Total	***4,209***		
Number of children	0	***2,202***	***52.32***	***52.32***
	1-3	***1,29***	***30.65***	***82.97***
	4-6	***516***	***12.26***	***95.22***
	7 and more	***201***	***4.78***	***100***
	Total	***4,209***		
Children under five years	0	***3,212***	***76.31***	***76.31***
	1-4	***997***	***23.69***	***100***
	Total	***4,209***		
Age at marriage	15 and less	***854***	***20.29***	***20.29***
	16-20	***894***	***21.24***	***41.53***
	21-25	***354***	***8.41***	***49.94***
	26-30	***108***	***2.57***	***52.51***
	31 and more	***1,999***	***47.49***	***100***
	Total	***4,209***		
Age at birth	15 and less	***345***	***17.19***	***17.19***
	16-20	***981***	***48.88***	***66.07***
	21-30	***495***	***24.66***	***90.73***
	31-35	***152***	***7.57***	***98.31***
	36 and more	***34***	***1.69***	***100***
	Total	***2007***		
Religion	Christian	***3,28***	***77.95***	***77.95***
	Muslim	***929***	***22.05***	***100***
	Total	***4,209***		

Table Three. Frequency and Percent Distribution of the explanatory variables from the 2005SD.

5.2 Method

The econometric analyses starts with applying appropriate econometric method on the sample datasets possessing some selected categorical and numeric variables from the cross-sectional datasets obtained from two consecutive Demographic and Health Surveys. Cross sectional studies with binary endogenous variable are extensively, dominantly and preferably examined by a ***multivariate logistic regression,*** a generalized linear model applied for binomial regression. The application examined the probability of female employment in paid labor market for any of numeric and categorical explanatory variables. The method has number of advantages on the precisions of the results. Some of the merits of the regression method are that it don't assume a linear relationship in between the predictors and outcome; it handles nonlinear effects, the endogenous variable doesn't have to be a normally distributed one, it is robust, assumption of normally distributed error and independents are not necessarily to be intervals and unbounded.
The general mathematical model can be written as $\boldsymbol{Logit(P)= \alpha + \beta_1 * X_1 + \beta_2 * X_2 + \beta_3 * X_3 + \ldots\ldots + \beta_k * X_k}$

Where ***logit (p)*** is logarithm of the odds ratio, ***log(P/1-P),*** $\boldsymbol{\alpha}$ is intercept of the model and the rest $\boldsymbol{\beta}$'s are coefficients of their corresponding predictor variables ,***X***'s. The constant term has no more relevance in the econometric analysis of odds of employment.
Regression of logistic model and interpretation of its coefficients is relatively, lets say the usual OLS models, complicated. In logistic regression, one category of the dependent variable is used to be selected as the comparison category (usually zero). The same is true for all categorical explanatory variables.

Regression of the dependent variable on the explanatory variables gives as many coefficient estimates as one less for each variable category to the corresponding variables. Those estimates are interpreted as the change in odds of being employed in paid labor market for a change in corresponding category of the variable from the reference category. If the coefficient estimate for one category of a variable is greater than one, the odds of being employed of females having that particular category characteristics is the estimated value times higher of the odds of being employed of females in the reference category of the same variable, ***citrus paribus***. Whereas, if the estimated coefficient of category of a variable is less than one, the odds of being employed of females having those particular category characteristics is one minus the estimated value times less of the odds of being employed of females in the reference category of the same variable, ***citrus paribus***.

Using the same mathematical specifications, three general and three partial econometric models are built and analyzed for both years sample datasets, separately. The general models include all selected variables in the model and analyze the effects of each explanatory variable on the odds of being employed in paid labor market in the urban parts of the country. The multinomial logistic regression of the ***general models***[14,15] can be stated as:

Equation 1.1

$$\boldsymbol{Logit(emp)= \beta_1 * edu + \beta_2 * poverty + \beta_3 * agg + \beta_4 * mar + \beta_5 * chi + \beta_6 * ch5 + \beta_7 * agma + \beta_8 * agbr + \beta_8 * rel}$$

14. The variables in the general and partial models are shorthand writings. Here is what those shorthand writings meant to say. Emp=employment , edu= education status, husband=husband education, husocc=husband occupation, mar=marital status, chi=number of children, ch5= number of children under five, agma= age at first marriage, agbr= age at first birth and rel= religion of the respondent (female) 15, the first two general models don't include husband education and husband occupation in order to include and treat all respondents, married and unmarried. Therefore when the first two equations includes all respondents in the sample datasets, the third general model includes all respondents whoever experienced marriage to examine husband education and husband occupation along with other determinants. The socioeconomic model also include only females who had (have) husband. The same is true for the 2005SD general and socioeconomic models.

Equation 1.2

$$Logit(emp) = \beta_1*edu + \beta_2*poverty + \beta_3*age + \beta_4*age^2 + \beta_5*mar + \beta_6*chi + \beta_7*ch5 + \beta_8*agma + \beta_9*agbr + \beta_9*rel$$

Equation 1.3

$$Logit(emp) = \beta_1*edu + \beta_2*husedu + \beta_3*husocc + \beta_4*poverty + \beta_5*agg + \beta_7*mar + \beta_8*chi + \beta_9*ch5 + \beta_{10}*agma + \beta_{11}*agbr + \beta_7*rel$$

Partial regressions are the compartments of the general regression by socioeconomic, demographic and culture variables. In the ***socioeconomic model***, predicting variables are the respondent's education, respondent's husband education; respondent's husband occupation and respondent's wealth status (poverty) are included.

Equation 2 $$Logit(emp) = \beta_1*edu + \beta_2*husedu + \beta_3*husocc + \beta_4*poverty$$

Coming to the demographic models, the female probability of finding job in paid labor market is predictable by her age and her marital status.

Equation 3 $$Logit(emp) = \beta_1*agg + \beta_2*mar$$

The fourth and the last model includes cultural factors affecting female employment in paid labor market. The five explanatory variables that are included in the models are number of children, children under five years old, age at marriage, age at first child birth and religion. is econometric equation for the ***cultural model*** is:

Equation 4 $$Logit(emp) = \beta_1*chi + \beta_2*ch5 + \beta_3*agma + \beta_4*agbr + \beta_5*rel$$

6. Results

The logistic regression employed to measure the general models (*Eq 1.1, Eq 1.2*and *Eq 1.3*) and partial models, the socioeconomic (*Eq 2*), demographic (*Eq 3*) and culture (*Eq 4*), provided us with odds of being employed in paid labor market with different levels of confidence intervals (90%, 95% and 99%). There are two general models, differ by the same variable, *age*, with different approach to assess the unit and abridge age effect on probability of finding job. Those models include all recruited variables in the study. The estimated coefficients of the ***general models*** show that almost all predicting variables at the most of their categories are, as theoretically and hypothetically expected, statistically significant, at least at 10 percent level of significance.

Regression result of 2000SD shows that effect of education is significant at secondary and higher level on probability of finding job in paid labor market at all commonly used level of significances (10, 5 and 1 percent). Taking "*no-education*" as a reference category, odds of being employed in paid labor market increase with increasing level of education, significantly, except for primarily level of education. From *table four*, odds of being employed in paid labor market is far higher for tertiary level educated females(5.06 in Eq1.1, 4.91 in Eq1.2 and 6.89 in Eq.2) than for those having secondary level of education (1.34 in Eq1.1, 1.34 in Eq.1.2 and 1.48 in Eq 2).

Coefficient estimates of the *general models* in 2005DS reveals that effect of education on employment is positive but significant only at higher level. The regression results in *table five* show that odds of being employed is not significantly affected by elementary and secondary level of education, holding "*no-education*" category as reference. Odds of being employed for increasing of education level from no-

formal education to primary education and to secondary education in the three of general models is positive but statistically insignificant at all level of significances. However, increasing to tertiary level increases the odds of being employed by 4.4 to 5.3 times of females having no formal education. Effect of education in socioeconomic model is also considerable. In both sample datasets, 2000SD and 2005SD, effect of education on employment starts from secondary school, holding "*no-education*" females as reference. From the logistic regression results, the expected hypothesis is accepted and statistically approved.

On the same line, female *husband education* affects her chance of being employed at different level with different momentum. In 2000SD, in the third general model (Eq 3), holding *no-education* as reference category, odds of being employed is greater when husband partners' education is primary and secondary. In 2005SD, it differs in that female employment didn't decrease for tertiary level but increased inconsiderably at all level of significance. Odds ratios of the variables categories of the ***socioeconomic model*** from 2000SD portray that almost the same sign and significance with the ***general models***, except for primary education. Odds rations of " *husband education*" categories in the 2000SD general models show that likelihood of employment in paid labor market increased for a female with primary and secondary education by approximately 1.3 and 1.4 times, respectively, of that of females' having husband with no education. Coming to the second sample dataset ***socioeconomic model***, the coefficient estimates shows that effect of husband education on females propensity of finding job is statistically insignificance for all level of education. The hypothesis given for the effect of *husband education* on female propensity of finding job in paid labor market is statistically justified for both years sample datasets general models.

In the 2000SD, the hypothesis given about effect of *husband occupation* on the propensity of being employed is econometrically justified neither in the ***general models*** nor in the ***socioeconomic models.*** The hypothesis is also rejected in the 2005SD general models. Husband occupation effect is only statistically significant for high occupation status in the 2005SD ***socioeconomic model*** In the *table five*, it is shown that odds of being employed for females whose husband occupation status is high is about 130% higher than odds of employment of females whose husbands are not working.

Effect of age on females' chance of being employed is considerably positive in both ***general and demographic models*** regression results for both sample datasets. Age is squared and included to see the diminishing return of increasing of age. In both sample datasets first general models**,** Eq1.2, a ***citrus paribus*** effect of age shows that a one year increase of age increases the probability of finding job by nearly 1.23 percents with increasing rate of being employed by 0.997 percent for both year datasets.

Examining the effect of age by five years abridges, as the tables show (table four and table five), holding the first age group as reference, reveals that odds of finding job increases with increasing of every five years considerably at all level of significance for both sample datasets of ***generals*** and ***demographic models*** with higher chance of being employed. In both 2000SD general models, holding females in age group 15-20 as reference category, odds of females employment is from 85 percent for 26-30 to 150% for 36-40 age category higher. The result in 2005SD of the general model is nearly the same. The effect of age is higher in the ***demographic model***. The regression coefficients in *table five* shows that odds of being employed increases from nearly 2.7 times in age group 21-25 to 5.23 times in age groups 31-35 higher than odds of employment for females in age group 15-20. Anticipated hypothesis about effect of age is, therefore, econometrically confirmed in both sample datasets (2000SD and 2005SD) and both models, ***generals*** and ***demographic models***.

The degree and significance of estimates of categories of female *marital status* in the econometric results confirm that being a married woman has lower positive effect when compared with being unmarried whether in the ***general*** or ***demographic models*** of both sample datasets. The odds ratios show that, taking

unmarried females as reference category, odds of being employed of married woman is decreased by around 63 percent for the first two general (Eq 1.1 and Eq 1.2) and the demographic model of 2000SD. For 2005SD demographic model, it differs in that the decline in propensity for finding job for married women decreases to around 55 percent. The effect of being divorced is considerable in both years when marriage is estimated in ***demographic model*** and, in Eq. 1.3, only divorced and married women are treated, taking married women as reference

Effect of *number of children* a woman ever born on her chance of being employed is also estimated in both ***generals***(Eq 1.1 and Eq 1.2) and ***culture model***. The results in 2000SD show that on average, odds of being employed of a woman with 4-6 children is about 15 percent and a women with 7 and more children is around 12 percent lower than the odds of being employed for women having less than or equals to three children ever born. In 2005SD, however, the effect of children on the mothers chance of employment is inconsiderable at all level of significance.

"children unde-five" ,however, affects her chance of being employed in paid labor market negatively, considerably, in both datasets ***general*** and ***culture models***. Table four shows that in 2000SD, compared to females who have no "*under- five"* child, the odds of finding job in paid labor market is 14 percent (Eq 1.1 and Eq.1.2) and 33 percent (culture model, Eq 4) lower for women who have *children under-five*. In 2005SD, the general and culture models coefficient estimates shows that females who have no "under five" children are averagely 37 and 57percent more likely to find jobs in paid labor market than, females with "*under five*" children. The hypothesis claimed about effect of children under five years old on propensity of finding job in paid labor market is statistically justified.

Impact and significance of females *age at first marriage* and *age at first birth* is analyzed in the ***general*** and ***culture*** econometric models for both years sample datasets, separately. In 2000SD both *age at marriage* and *age at first child birth* affect the female chance of employment with different level of significance for different age groups significantly. In both general (Eq1.1 and Eq1.2) and culture models odds of being employed of a female is on average 1.34 and 1.48 times greater for females first married in age group 21-25, and; 1.48 and 1.84 times greater for females first married in age group 26-30, respectively, than odds of employment of females who married earlier, under 16 years old. In the ***general models***, taking age group 15 and less as reference group, odds of employment increased for age group 16-20 by 1.04 times, on average, however, statistically insignificantly at all level of significances. In the ***culture model***, effect of *age at first marriage* is considerably and increasingly affects the odds of being employed at 10 percent for age group 16-20 and 1 percent for the rest groups of significance for age groups 16-20 and Coming to the 2005SD econometric models, effect of age at first marriage is explained considerably and grow with increasing of age at first marriage when it is analyzed with only cultural determinants. In the ***general models,*** effect of age at first marriage is increasing with age but statistically insignificant except for females in age group 21-25 at 1 percent level of significance and in age group 26-30 at 10percent level of significance.

Effect of *age at first child birth* is also analyzed in the econometric models. In the 2000 sample dataset the odds ratios reveal that with increasing of age at first birth increases probability of employment except for age group 26-30, in both generals and culture models. Taking females who gave first child birth in age group less than 15 years old as reference, likelihood of finding job of females who gave first child in age groups 21-25 and 31-35 is 25 percent (at 5percent level of significance) and 170percent (at 1 percent level of significance) higher respectively for the general models and 30 percent and 148 percent (at 1 percent level of significance) higher for culture models, holding all other factors constant. The results obtained by regressing the variable in the 2005 sample dataset is insignificant in all age groups and both general and culture models.

The odds results also show difference of probability of finding job controlled for religion difference. In 2000SD, taking Christian females as reference, the odds of being employed of Muslim females is less by about 25 and 40percent, both in ***generals and culture models***, respectively. Regressing the 2005SD gives that Muslim Females are about 30percent and 44percent less likely to find a job in paid labor market than their counteract Christians, in both general and culture models.

Speaking of summarizing the econometric results in relation with the speculated hypotheses, the econometric analyses confirm most of the claimed hypotheses. The 2000SD shows that in the ***general models***, *Eq 1.1* and *Eq 1.2*, in which all selected variables except *husband education* and *husband occupation* are included in, all the selected variables affects propensity of being employed in paid labor market with difference level of significance and strength. In the third general model that is built to capture effect of *husband education* and *husband occupation*, all except husband occupation affect females probability of finding job. In the ***socioeconomic model***, the coefficient of all except *husband occupation* shows statistically significant and hypothetically expected relationship with probability of employment in paid labor market. Coming to the ***demographic models*** age and marital status attained the hypothetically expected sign and strength. In the ***culture model***, all included explanatory variables except *age at first child birth* are statistically significant and their effect is as hypothetically expected.

All regression outputs of the 2005SD econometric models disclose that in the ***general models*** many of the hypotheses are partly violated in that while many of the relationship is as hypothetically expected, the significance of the predictor variables is inconsiderable at all level of significance. Effect of education was significant only at tertiary level and effect of husband education is significant at primary and secondary levels. *Husband Occupation* effect on odds of finding job is statistically insignificant at all level of confidence intervals. Significance of the rest variables is almost similar with the significances and relationships found in the 2000SD models except for *age at first marriage* and *age at first birth.*

Focusing on the general models of both sample datasets, as those includes all respondents socioeconomic, demographic and cultural characteristics, and treating the first two and the third econometric models findings differently[15], the 2000SD regression coefficient estimates shows that education (at secondary and tertiary), poverty (at low level), age (at all except at 21-25), marital status (married), number of children(all level) and children under five years old; at first birth (16-20) and finally religion does have strong effect on propensity of finding job in paid labor market. In the third general model, Eq 1.3, estimates shows that unlike *husband occupation, husband education* (primary and secondary level) has considerable and hypothetically expected effect on probability of employment. The 2005SD the first ***general models*** show nearly the same results and significances except for *age at first marriage* and *age at first child birth*.

In conclusion, it is hypothetically and econometrically proven that <u>almost</u> all socioeconomic, demographic and cultural determinants which are recruited, discussed and analyzed, modeled and finally estimated variables affect females' employment status.

15. the interest to build the third general model differently is laid on methodological pressure. Including effect of husband education and husband occupation in the study makes the regression selective on respondents marital status since never married females cant have any information about husband education and husband occupation. That lowered the dataset and treats all except unmarried females. I had to chose either to <u>treat the effect of the variables by excluding females who never married with their other information</u> or, <u>build new econometric model and study the effect of husband education and husband occupation along with other characteristics non-never married shared and all females in the sample datasets having common information, separately.</u>. The later was satisfactory.

Predicting Variables	Categories	Eq 1.1	Eq 1.2	Eq 1.3	Eq 2	Eq 3	Eq 4
Education	1-8	*1,008*	*0,988*	*1,005*	*0,994*		
	9-12	*1,338***	*1,308****	*1,482****	*1,448****		
	13+	*5,069***	*4,908****	*6,895****	*6,681****		
Husband. Edu	1-8			*1,309****	*1,072*		
	9-12			*1,387****	*1,284****		
	13+			*0,882*	*0,846*		
Husband. Occ	Low			*0,773*	*0,983*		
	Middle			*0,902*	*1,009*		
	High			*1,145*	*1,320*		
Poverty	Middle	*1,662*	*1,748*	*1,429*	*1,317*		
	Low	*4,104****	*4,184****	*4,025****	*3,466****		
Age (Numeric)			*1,219****				
Age square			*0,997****				
Age(Categorical)	21-25	*1,280*		*1,210*		*1.406**	
	26-30	*1,853****		*1,847****		*2.071****	
	31-35	*2,284****		*2,283****		*2.528****	
	36-40	*2,465****		*2,515****		*2.571****	
	41-45	*1,795****		*1,857***		*2.017****	
	45+	*2,400****		*2,554****		*2.374****	
Marital status	Married	*0,364****	*0,371****			*0.333****	
	Divorced	*0,895*	*0,897*	*2,451****		*0.732****	
Num ofChildren	4-6	*0,876**	*0,854***	*0,954*			*0.883***
	7+	*0,797**	*0,784***	*0,826**			*0.776****
Child.Under-five	1-4	*0,862***	*0,871***	*0,836****			*0.666****
Age at Marriage	16-20	*1,063*	*1,070*	*0,997*			*1.126**
	21-25	*1,330***	*1,354****	*1,279***			*1.482****
	26-30	*1,414**	*1,480**	*1,455**			*1.841****
	31+	*1,281*	*1,330*	*0,972*			*1.954****
Age at Birth	16-20	*1,073*	*1,078*	*1,009*			*1.098*
	21-25	*1,267***	*1,239***	*1,288***			*1.304****
	26-30	*0,627****	*0,597****	*0,648***			*0.695**
	31-35	*2,168***	*2,000***	*2,720***			*2.481****
Religion	Muslim	*0,735****	*0,736****	*0,777****			*0.585****
Number of O.		**6356**	**6356**	**5788**	**5790**	**6358**	**6356**
LR Chi		**701**	**692.86**	**627.22**	**296.13**	**274.72**	**265.54**
Likelihood R		**-3927.74**	**-3931.896**	**-3553.8092**	**-3720.3398**	**-4142.28**	**-4145.5**

Table Four. Logistic Regression Results (Odds ratios) of 2000SD. *** significant at 1%, **significant at 5% and *** significant at 10%.

Predicting Var	Categories	Eq 1.1	Eq 1.2	Eq 1.3	Eq2	Eq 3	Eq 4
Education	1-8	*1,013*	*0,997*	*0,963*	*1,143*		
	9-12	*1,221*	*1,200*	*1,342**	*1,397***		
	13-15	*4,544****	*4,431****	*5,360****	*5,127****		
Husband. Edu	1-8			*1,523***	*1,175*		
	9-12			*1,433***	*1,157*		
	13-15			*1,256*	*1,078*		
Husband. Occ	low			*1,065*	*1,512*		
	middle			*1,307*	*1,673*		
	high			*1,914*	*2,309***		
Poverty	middle	*3,163*	*3,233*	*2,189*	*1,817*		
	low	*5,512****	*5,459****	*4,544***	*4,381***		
Age (Numeric)			*1,243****				
Age square			*0,997****				
Age(Categorical)	21-25	*1,27*		*1,143*		*2.699****	
	26-30	*1,774***		*1,791***		*4.437****	
	31-35	*2,138****		*2,118***		*5.230****	
	36-40	*1,925***		*1,902***		*4.604****	
	40-45	*1,468*		*1,488*		*3.999****	
	45+	*1,807**		*1,838*		*4.563****	
Marital status	married	*0,371****	*0,373****			*0.464****	
	divorced	*0,868*	*0,866*	*2,261****		*1.083****	
Num ofChildren	4-6	*0,949*	*0,921*	*1,008*			*0,893*
	7 and more	*0,898*	*0,901*	*0,929*			*0,768*
Child.Under-five	1-4	*0,624****	*0,643****	*0,583****			*0,431****
Age at Marriage	16-20	*1,124*	*1,123*	*1,059*			*1,165*
	21-25	*1,572***	*1,569****	*1,568*			*1,778****
	26-30	*1,236*	*1,254*	*1,313*			*1,877***
	31-35	*1,454*	*1,493*	*1,079*			*2,431****
Age at Birth	16-20	*1,036*	*1,050*	*0,962*			*1,031*
	21-25	*1,177*	*1,161*	*1,163*			*1,224*
	26-30	*0,789*	*0,771*	*0,745*			*0,881*
	31-35	*2,219**	*2,077*	*3,235*			*2,335****
Religion	Muslim	*0,677****	*0,676****	*0,708***			*0,588****
Num Obs		**2006**	**2006**	**1745**	**2011**	**4209**	**2006**
LR Chi		**275.96**	**278.41**	**233.17**	**92**	**349.14**	**152**
Likelihood R		**-1229.04**	**-1227.82**	**-1058.23**	**-1313.625**	**-2636.8**	**-1290.97**

Table Five . Logistic Regression Results (Odds ratios) of 2005SD
****** significant at 1%, **significant at 5% and *** significant at 10%.***

8. Discussions

The section discusses the findings, and suggests possible reasons for the significance and insignificance of the effects of the selected socioeconomic demographic and cultural variables on odds of females' employment in paid labor market, scrutinizes the effects of the predictor variables at the categories levels and compares the strength of influences of the variables to finally suggest characteristic adjustment to be made in order to prosper the chance of employment in paid labor market.

In 2000SD, effect of education is considerably high for secondary and tertiary education in both ***generals*** and ***socioeconomic models***. Given "*no-education*" as reference category, odds of employment is around 1.4 and more than 6 times for females having secondary and tertiary education, respectively, in all models. In 2005SD, significance of education on female employment in paid labor market, however, is only at tertiary level in ***general models*** with higher probability and starts at *secondary level* with less strength compared to that of the 2000's. The odds ration of *primary level* in both years' models explicit that *primary education* is not strong enough to increase work opportunity of females in paid labor market. With increasing of supply of labor in labor force participation, no matter how employment is increasing in urban areas, females need to increase their education status to secondary and tertiary level so that they can increase their chance of finding job in paid labor market. The decrease in probability of finding job for females having secondary and tertiary education, from 2000 to 2005, also imply that there is a slight shift in demand for educated females in the market from secondary to tertiary level, and a relatively high supply of secondary level educated females in the labor market in the five years period, 2000 and 2005. The essentiality of education, specially tertiary level, in fostering of females employment is not only explained in the socioeconomic models where only socioeconomic determinants are treated in, ***general models*** also confirms the importance of education in females employment in paid labor market.

Husband education doesn't have a direct influence on propensity of finding job in paid labor market. Its effect is through facilitating and encouraging females to involve in paid labor market to maximize household income. Therefore it is not uncommon to witness that the effect of husband education and husband occupation is much less than the effect of female education (statistical significance and magnitude wise). husbands having high educational status may appreciate their wives to increase their education status and increase household income from labor market. Some, may be those husbands generate high income enough to the family, on the other hand, could prefer to let their wife stay home and increase utility form household production.

In 2000SD, the ***general models*** and the ***socioeconomic model*** show that with increasing of *husband education* level, the chance of being employed is decreased and at tertiary level, odds of being employed in paid labor market for a women is lower than odds of being employed of women having not-educated husband. In 2005 ***socioeconomic model,*** effect of *husband education* is statistically insignificant. In ***general models***, the significance of *husband education* lied only on primary and secondary education. Holding woman with uneducated partner as reference, the odds of being employed for both females with primary and secondary level educated is about 30 and 38 percent higher for 2000SD at all level of significances and; about 52 and 43 percent higher for 2005SD at 5 percent level of significances, respectively. The insignificance of *husband education* at highest level could be due to some facts already stated in *chapter three* that effect of partner's education is, unlike the female education, indirectly and is subjected to irrational decision. *Husband education* may affect the decision of the household in maximizing overall utility of the family. It may be due to the fact that husbands with tertiary level return in paid labor market is high and, may prefer to increase household and domestic utility by assigning their wives at home. The two education variables results shows that female employment in paid labor market increases with her educational status than her husband education intrinsic effect.

The 2000SD and 2005SD econometric findings don't support the contemplated hypotheses about effect of *husband occupation* on their propensity of finding job in paid labor market since all odds values are insignificant at all suggested level of significances for both ***generals*** and ***socioeconomic models***. In the country context, like many other poor countries, if husband's occupational status is low, there is higher chance of being mated with females in slightly or equally poor economic status. This might push the female to participate in non-paid or pay in-kind activities. The likely maximum chance of being employed in paid labor market for females with low level occupational status is either in low occupational levels.

The 2000SD and 2005SD coefficient regression results show that taking high level of poverty as reference, low poverty increases odds of employment by more than four and five times, respectively, in the general models. Females' economic wellbeing also influences their chance of being employed in paid labor market, directly or indirectly. Females in relatively low poverty could invest on their education and increase resources and information that ultimately help their chance of finding job in paid labor market. The graph (below) shows distribution of female education over their poverty level. In both sample datasets educational status of very poor females is very low. In 2000 sample dataset almost 85precent and in the 2005SD more than 60 percent of the respondents having high poverty status are not-educated and their share declined to 3 percent and 8 percent in secondary education and, in tertiary education both years groups have no share at all. Fallowing females with low poverty level gives another picture. In 2000SD the share declined to about 45 percent, grow in the secondary school to about 30 percent and to about 6 percent in the tertiary level. In the 2005 dataset, the share in no-education for females with low poverty declined to approximately 20 percent, in secondary school soared to about 45 percent and in tertiary level it grows to nearly 8 percent. The close association between poverty and education, and the significance of education at secondary and tertiary level, on odds of being employed forewords interestingly possible reason that poverty level could influence female employment opportunity by constraining access to education. The poverty–education relationship case in Pakistan is also studied that higher level education of married women shows that those women don't have high poverty status (Kahn,A & Khan,T 2009).

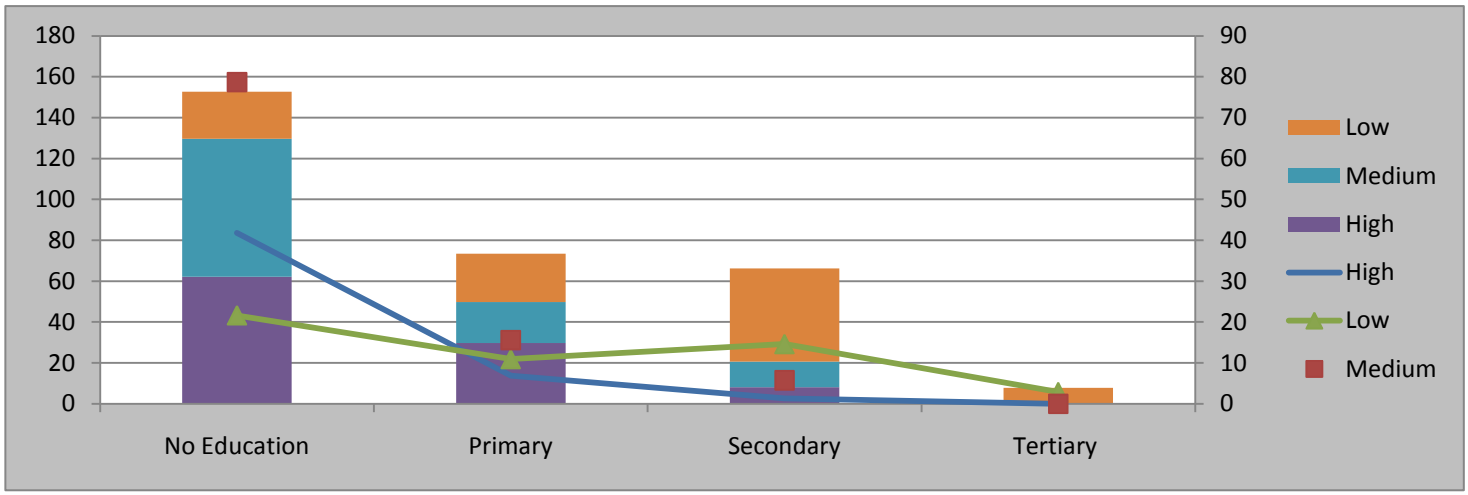

Figure Four. Percent distribution of females education across poverty level in 2000SD and 2005SD. Note that the line graph is for 2000SD and bar graph is for 2005. Source: Constructed from 200SD and 2005SD.

Female's employment in paid labor market is also influenced by their age. As discussed, anticipated and finally statistically confirmed with increasing of age, females chance of being included in the paid labor market also grows. In the econometric regression, the effect of age on employment is examined in two different ways, a year and five years abridge change on odds of employment.

Coefficient estimates of categories of age in general model (Eq. 1.1) of the 2000SD shows that, taking females in age group 15-20 as reference, females in next five years of age groups are more likely to be employed in paid labor market, except for females in age group 21-25. Likelihood of employment of females in 26-30 and 41-55 is about 80 and 85 percent higher than for females in reference category. The odds ratios show that the chance of employment for females in age groups 31-35 and 36-40 is more than 130 percent compared to females in the reference category.

In the 2005SD ***demographic model*** the odds of probability of finding job, holding age group 15-19 as reference category, grows from 2.7 times and 4.4 times in age groups 21-25 and 26-30, and skewed to more than 5 times in age group 31-35 respectively. The strength is considerably high in age groups 36-40 (4.6 times) and 41-45 (3.99) as well, respectively. The strength and significance of chance of being in paid labor market for those groups could be easily interpreted as those females in the reference group usually don't join the labor market. In the country context, most of the urban dwellers particularly females are used to start jobs in paid labor market at latter age but start contributing their labor in non-paid market at very early age. This could possibly be due to the fact that females in this age group are seemingly exposed to social and cultural norms that enclave them not to exercise the tradable labor market. It could be early age for many females to complete their education. Coming to cultural practices, early age at marriage and childbirth could deter females to stay away from paid labor market. The increasing in probability of finding job, by itself, shows increasing of skill and work experience at later age. Employers are also biased in favor of applicants at latter age. Higher work experience, Ambition, increasing of responsibility, maturity and socioeconomic factors also start to be driving forces in those age groups. The considerably positive effect of age is not only explained in ***demographic models*** it is also in ***general models*** where all selected determinants are included in.

The econometric findings of both sample datasets confirm that *marital status* is one of the prominently influencing determinants of females chance of finding job in paid labor market and income return through compromising her time investment in household production and in paid labor activities. Both sample datasets econometric regression coefficient results show that married women have considerably less chance of being employed in paid labor market (about 64 percent less than odds of finding job of unmarried women for both datasets general models). effect of divorce is not statistically significant in both sample datasets general models. The 2000SD and 2005SD third general regression models (Eq 1.3 for each) show that holding married women as reference category, odds of divorced women employment in paid labor market is 2..26 times higher. Such large difference of finding job in paid labor market among unmarried and married females is due to the fact that in the country context, being a married woman, compared to unmarried female, increases the importance of the female in family household production than unmarried females as marriage consequences childbearing and childrearing, in most cases. Marrying a husband is also one means of increasing bargaining power of females in that when education status and skill required in paid labor market is low, females way out is, then, marrying a husband, probably working in paid labor market willing to accept their proposal of increasing household utility by engaged in household production and/ or non-tradable paid labor market

Among variables included in the ***culture model***, all but *number of children* and *age at first child birth* are both statistically significant and the relations are as explained in their corresponding hypotheses, for both sample datasets econometric models. The difference of odds of being employed in between females with and without children less than five years old is considerable at all level of statistical significances. This is due to the fact that child care is time intensive domestic task, usually left for mothers. In Ethiopia context, there is no so called parental leave given for a husband to help his wife. The contextual meaning and understanding about number of children and birth space are partly cultural and, return from cultural belief, norms and practices are not inconsiderable. Mothers' household production function includes cultural influences in to account.

Effect of *age at the first marriage* is statistically significant at ages that give more sense. In both years, effect of ***age at first marriage*** affects females' odds of being employed in paid labor market, statistically and significantly, for all except for the females had their first marriage at 16-20. It is sounding that even for females in this age group, the odds of being employed is not statistically supported let alone for females who married to start investing their time for higher household production. The 2000 sample data regression output shows that taking age group less than sixty as reference, odds of being employed in paid labor market ranges from 50 percent for age group 21-25 to 90percent for age group 31-35 higher. In the 2005 sample dataset, the odds of being employed in paid labor market increased by 70 percent for age group 21-25, by 80 percent for age group 26-30 and by about 90 percent for age group 31-35. The trend supports the life time investment theoretical justification already discussed in the theoretical foundation chapter. The later a female marry, the longer time she will have to increase her educational status and time and motivation to search jobs in paid labor market. Only in 2005, the effect of ***number of children*** and ***age at child at birth*** on a female chance of being employed in paid labor market is statistically insignificant and the relation ship is also against the hypothesis drawn.

Explanation for why Muslim females chance of being employed in paid labor market is quite less than the chance of Christian females is more of cultural. Primarily compared to Christian females, Muslim females are more tied by conservative practices under the cover of religion, albeit those practices are parasitic to the belief. Being a Muslim or Christian by it self have nothing to do with chance of employment, in the country context. However, norms and practices affect the chance of being employed intrinsically. Many Muslim females are not closer to secular nature of the labor market. Most Muslim husbands want their wives give many children. It is apparent that compared to Christian husbands, Muslim husbands have more than one wife and wanted their wives stay home and act religious. Muslim females marry and give birth at their early age than Christian females[16]. Their education status is also very low compared to Christian females. The depicted graph (above) explicates the Christian and Muslim respondents education Status

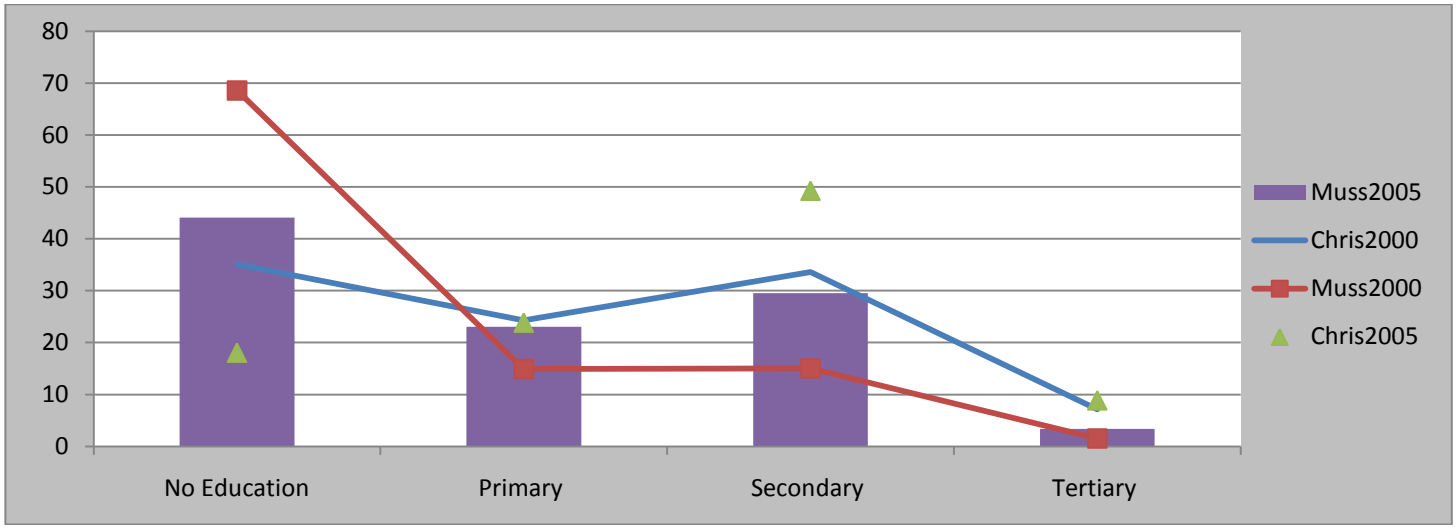

Figure Five. Muslim and Christian females education distribution (percent) from 2000SD and 2005SD. Source: Constructed from 2000SD and 2005SD. Note that Muss2000 and Chris2000 are meant to say Muslims from 2000SD and Christian from 2000SD. Likewise, Chris2005 is to say Christian from 2005SD and Muss2005 is to say Muslims from 2005SD .

16. Descriptive statistics of 2000SD and 2005SD show that Muslim females have many of children and children less than five years compared to Christian females. For example, 40 percent of Christian females in the 2000SD have maximum of three children. The rest 38 and 22 percents of Christian females have 4-6 and more than 6 children respectively. Coming to Muslim respondents, 39 And 37 percents of Muslim females have 4-6 and more than 6 children. The rest 24 percent females have maximum of three children. Cross tabulation of "religion" and "child under five" shows that compared to Christians, Muslims have many "under five" children. The 2000SD shows that nearly 50percent of Christians have no "under five" children and more than 60 percent of Muslim children have "under five" children.

9. Conclusion

Ethiopian females living in urban parts of the country have been facing rampant unemployment. Severity of the country unemployment demands researchers in the area to supply potential literatures and studies from economic structure and overall demand side of labor at *Macro-level* perspectives so that could ultimately influence policy makers in the areas. Nonetheless, studying female employment status in a country where there is no as such remarkable gender discrimination in employing system is interesting as well as plausible to study at Micro-level. In this cross-sectional study, the most important determinants are included to investigate not only the seriousness and relationship but also to scrutinize their effect on female probability of finding job in paid labor market at the very closer level by dividing each variable in different categories. The study used two DHS datasets, DHS2000 and DHS2005, and builds its own sample datasets, 2000SD and 2005SD, by focusing on only females in urban residence and working for cash and, cash and kind, for those who are working by the time of interview.
Screening the sample datasets, despite of downsizing the dataset, makes the surveys implementable- may be for the first time- by making the existing human capital theory and household production theory applicable where the result would have been spurious had the datasets been used as originally downloaded. The new datasets also privileged my study to reference some literatures from the other countries context in quest of deterministic theoretical foundations. The most commonly used econometric regression model, ***logistic regression model***, is employed and six different models, three ***general***, one ***socioeconomic***, one ***demographic*** and one ***culture*** are estimated.

Taking general models in account, in both years sample datasets education, partner education, poverty level, age, marital status, children under five, age at first marriage and religion influence female employment in paid labor market, considerably. The rest determinants specially *age at first birth* and *number of childr*en are statistically significant at all level of significance only in the 2000 sample dataset.

Employment status and economic wellbeing of urban females could be improved by making socioeconomic, demographic and cultural characteristic adjustments to increase time investment on finding job, decrease skill depreciation and increase their education status; and grow their competitiveness in the market. Limiting number of children; delaying time of first marriage and first child birth are strongly recommended structural adjustments to maximize their chance of being employed in paid labor market. Muslim females are also recommended to improve their education status, delay marriage and birth time few years later than the existing trend, and to reduce number of children fewer than the existing trend.

the study stresses on female employment status from micro-level point of view for the very fact that females employment status and economic integration is seriously poor compared to males. In a country where there is negligible job discrimination by gender, I do strongly believe that both Government, for the general severity of employment status and females, for particularly stern employment status, need to share the blame and push to make structural and characteristic adjustments in order to enjoy equal benefit from the country resources(though the blame strangely goes to Government). Non-government organizations and who have a closer look at the society will also be benefited from the study. As it is very rare study, may be the first, its value is surely high for may concerned bodies.

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Appendix[1]

correlation	empl	ed	pared	paocc	wea	age	agsq	marri	agma	agbir	ch5	chi	rel
Employment	**1.00**												
Education	**0.14**	**1.00**											
Husband Ed	**0.10**	**0.63**	**1.00**										
Hus. Occupa	**0.00**	**-0.35**	**-0.43**	**1.00**									
Poverty	**0.09**	**0.15**	**0.13**	**-0.08**	**1.00**								
Age	**0.13**	**-0.13**	**-0.09**	**-0.04**	**0.00**	**1.00**							
Agesquare	**0.13**	**-0.10**	**-0.07**	**-0.05**	**0.01**	**0.99**	**1.00**						
Marriage	**0.17**	**-0.10**	**-0.06**	**0.04**	**-0.03**	**0.06**	**0.05**	**1.00**					
Age at Mar	**0.09**	**0.32**	**0.25**	**-0.12**	**0.00**	**0.03**	**0.04**	**-0.07**	**1.00**				
Age at Birth	**0.07**	**0.22**	**0.17**	**-0.07**	**-0.02**	**0.08**	**0.09**	**-0.07**	**0.71**	**1.00**			
Children und	**-0.18**	**0.05**	**0.04**	**0.04**	**-0.05**	**-0.57**	**-0.56**	**-0.26**	**0.17**	**0.17**	**1.00**		
Children	**-0.04**	**-0.32**	**-0.27**	**0.09**	**-0.09**	**0.53**	**0.52**	**-0.11**	**-0.24**	**-0.26**	**-0.16**	**1.00**	
Religion	**-0.13**	**-0.27**	**-0.27**	**0.12**	**-0.12**	**-0.04**	**-0.05**	**-0.08**	**0.01**	**0.03**	**0.12**	**0.15**	**1.00**

Table One : Correlation Coefficients from 2000SD. Source: Calculated STATA output of 2000SD.

	Employment		HusEdu	HusOcc	Pover	Age	Agesq	Marr	childre	ch5	Agemar	AgeB	Rel
Employment	**1.00**												
Education	**0.15**	**1.00**											
Husband Ed	**0.09**	**0.63**	**1.00**										
Hus. Occupa	**-0.02**	**0.22**	**0.27**	**1.00**									
Poverty	**0.09**	**0.15**	**0.14**	**0.04**	**1.00**								
Age	**0.13**	**-0.12**	**-0.10**	**0.05**	**0.00**	**1.00**							
Agesquare	**0.13**	**-0.10**	**-0.08**	**0.05**	**0.01**	**0.99**	**1.00**						
Marriage	**0.17**	**-0.09**	**-0.07**	**-0.05**	**-0.03**	**0.06**	**0.05**	**1.00**					
Children	**-0.04**	**-0.32**	**-0.27**	**-0.04**	**-0.09**	**0.53**	**0.52**	**-0.11**	**1.00**				
Children und	**-0.18**	**0.05**	**0.06**	**-0.05**	**-0.05**	**-0.57**	**-0.56**	**-0.26**	**-0.16**	**1.00**			
Age at Mar	**0.09**	**0.31**	**0.24**	**0.09**	**0.00**	**0.03**	**0.04**	**-0.07**	**-0.24**	**0.17**	**1.00**		
Age at Birth	**0.07**	**0.22**	**0.16**	**0.07**	**-0.02**	**0.08**	**0.09**	**-0.08**	**-0.26**	**0.17**	**0.71**	**1.00**	
Religion	**-0.13**	**-0.27**	**-0.27**	**-0.04**	**-0.12**	**-0.03**	**-0.05**	**-0.08**	**0.15**	**0.12**	**0.01**	**0.03**	**1.00**

Table Two: Correlation Coefficients from 2005SD. Source: Calculated STATA output of 2005SD.

1. The first rows of both tables, table 3 and table 4, are short hand writing of their corresponding variables listed in the first columns of the tables. A name given for one of the columns is meant to say the name given at the corresponding row, with which the variable makes a correlation value one. Note also that I prefer using two decimal numbers, albeit the STATA provided me with four decimal figures.