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Employment Patterns among Women: A Comparative Study of Rural Malawi and Rural Pakistan

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Employment Patterns among Women: A Comparative Study of Rural Malawi and Rural Pakistan

By

Amira Hassan and Asma Hyder*

Abstract

The study presents the comparison for two different economies; rural Malawi and rural Pakistan by using cross sectional data drawn from 'MDICP' and 'PSLM' for the year 2007-08. The main objective of the study is to analyze the factors that determine the female behavior towards employment during their child-bearing age (15-45). We also extend our analysis toward women participation on-farm and off-farm economic activities. The Probit model is used to examine the effects of various personal demographic along with social demographic determinants on female participation in economic activities. The focus of the study is to analyze that how these factors determine the women decision to participate on-farm or off-farm economic activities for both countries under consideration. The main findings of the study show that these demographic and individual characteristics influence women participation in both countries. The coefficient of age is positive and significant for female decision to participate in economic activity for both countries. The Study's findings indicate that wealth has a negative influence on female decision to work either on-farm or off-farm activity in Pakistan. All the coefficients of education positively influence the Malawian women participation in any economic activity while in case of Pakistan results indicate that a rise in education level beyond secondary level of education increased the probability of females to active in labor market whereas less educated females are discouraged from entering in labor market. Married Malawian women are economically more active though the case is opposite for Pakistan.

Key Words: *Gender, Rural Studies, Asia, Africa, labor force*

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Introduction

Over the past decade in particular, much has been written on the increasing feminization of the labor force in all around the world (Roberts, 2003 for US; Sasaki, 2002 for Japan; Lee, Jang & Sarkar, 2008 for Korea; Contreras & Plaza, 2010 for Chile, Maglad, 1998 for Sudan). There are significant variations in female participation rate across the regions due to differentiated patterns and condition of work, socio-economic contexts and deviation in economic and human resource development policy environment, these discrepancy are highlighted through the Census and Labor force Surveys of different countries across the world (Jose,1989). Cameron et al (2001) found that determinants of women's labor force participation in Asia vary dramatically across countries so it is important to consider the cultural context when trying to make policies.

The study is unique in a sense that it will not only provide a cross country comparison of two different economies but also of two different continents i.e., rural Malawi, one of the poorest countries in Sub-Saharan Africa and rural Pakistan, a developing economy in South Asia. The contribution of the study is; Firstly, it is the first study in the literature of Pakistan which presents exploration of this phenomenon in two different societies from Asia and Sub-Saharan Africa with the help of household level micro data. However, Ray (2000) worked on determinants of child labor at micro level was first comparative study between Pakistan and Peru. Secondly, it provides the comparison of women economic behavior in very traditional societies where role of female in economic activities is judgment call.

The United Nations Development Program (UNDP) ranked 187 countries according to their score in human development index (HDI)¹. Although both countries fell under low HDI but

¹ The human development index is a summary composite index of human development in all over the world and rank the countries according to human development that distinguish whether a country is developed, still developing or underdeveloped measured on the basis of education, literacy rate, life expectancy at birth, gross domestic product per capita.

Malawi is far less developed than Pakistan. According to most recent Human development report released by UNDP Pakistan has a rank of 145 and Malawi has a rank of 171(UNDP, 2011). The present study is interesting because the two countries have differences in many other aspects including their cultural norms, religion, education system, marriage pattern dynamics and geographical distance so both countries under investigation are significantly different in all spheres of life. Malawi's total population is 14,005,113 which is very low as compared to Pakistan's total population which is 167,422,258 but the proportion of female population is almost similar in both countries i.e., 49.11% and 50.04% in Pakistan and Malawi respectively. Annual population growth rate of Malawi is 3% which is much higher than Pakistan's annual population growth rate that is 1.8%. Malawi's 81% population and Pakistan's 63% population lives in rural areas.GDP/capita of Malawi is 290.86\$ and GDP/ capita of Pakistan is 978.80\$ that is almost three times greater than of rural Malawi. In Malawi, agriculture sector contributes 31 % in its GDP while in case of Pakistan agriculture contributes 20% in its GDP². Malawi's health status is not better than Pakistan as life expectancy at birth in Pakistan is 65 years while in Malawi it is 52 and mortality rate of adult females in Pakistan is 161 while in case of Malawi it is 433.HIV/ Aids is the biggest problem of Malawi as it is worlds 9th most effected country with HIV/Aids. In Malawi, there are small landholdings likewise Pakistan. Moreover, Malawi is a landlocked; rain depended and highly densely populated country. According to Human Development Report (2011), the region of South Asia, Sub- Saharan Africa and the Arab States is experiencing sharp inequalities in autonomy and power of men and women. Both countries of interest experience great gender differences as gender inequality rank of Pakistan is 115 and Malawi is 120 out of 146 courtiers (UNDP, 2011).

²All this information is taken from World Bank Database[<http://data.worldbank.org/indicator/NV.AGR.TOTL.ZS>]

Many researchers considered that social and demographic behavior is the root cause for increased gender inequalities in South Asia (Morgan & Nirana, 1995; Dyson and Moore, 1983). According to Fontana & Paciello (2009) South Asian women are relatively more involved in agricultural sector as wage laborer, as a consequence of women's weaker rights over land and other assets as compared to any other region. The incidence of female labor force participation rate in Pakistan is exceptionally low. In traditional societies like Pakistan where women are subordinated by men and social and cultural taboos are very strong, female decision to participate in labor market not only determined by market forces but non-market forces also play a significant role. The average annual growth rate of female participation in labor force is increasing slightly in Pakistan. According to ILO estimates in 1990 female participation rate was 13.9 percent and at the end of twentieth century (in 2000) it was 16.4 percent. Further it approaches to 19.9 and 23 percent in 2005 and 2010 respectively which are still very low as compared to other south Asian countries like 30.3 percent in India, 59.8 percent in Bangladesh, 38.0 percent in Sri Lanka, 83.1 percent in Nepal and 68.2 percent in Bhutan (ILO, 2010).

The labor force participation rate of female in Malawi was almost stagnant during 1990's, it fluctuates from 75.9 percent in 1990 to 77 percent in 2000, with gradual increase it reaches to approximately 80 percent in 2005 but after 2005 there was a significant increase of 1.8 percent in average annual growth rate of female labor force participation, with this increasing rate it reached to 84.9 percent in 2010 which is very high as compared to other countries in the region as female labor force participation in Ghana is 68.4 percent, Uganda has 77.0 percent, South Africa has 47.2 percent, Zambia has 73.5 percent, Kenya has 61.8 percent, Nigeria has 48.00 percent and Zimbabwe has 84.3 percent (ILO, 2010). In the case of Sub-Saharan Africa, women are more involved in vulnerable employment as compared to men due to segmented markets

(HDR, 2011). Despite high women participation, poverty level of Malawi is also high with low level of development, as far as development is concerned it not only depends on quantity but also on quality of jobs that are to be created (Fontana & Paciello, 2009). Phenomenon of high FLFP along with low development can be attributed to fact that women have limited access to decent work, low wage level, their productive and reproductive roles are not protected through policies and their rights are not respected. Pakistan and Malawi are different in context of level of development. Malawi's high female participation may be because of data problem, definitional issues or measurement variations such as difference in age bracket, working hours, unpaid family helpers or denominator. Another possible aspect of such high participation rate is the economic issue as it is a poor economy, such a poor household involved in those economic activities where the supply of labor is inelastic to wage as these families are too poor so the entire family has to work. In rural Malawi it might be possible these households are usually below the minimum consumption intake, with poor physical and soft assets and are much vulnerable to the ongoing micro and macro changes, therefore entire family is engage in work.

The main objective of the study is to analyze the factors that determine the female behavior towards employment during their child-bearing age (15-45) in rural areas of Malawi and Pakistan by using cross sectional micro data. The traditional societies like rural Malawi and rural Pakistan depend a lot on farm production. According to Adeniyi, L. 2010, in sub- Saharan Africa more than half of rural employment is based on self-employed farmers and most of them are women and in case of Pakistan majority of many of rural women work on households agricultural land (Sathar & Kazi 2000). Thus we also extend our analysis toward women decision to participate in farm activities. In customary societies, women participation in economic activity is not only determined by economic factors but also through demographics,

fertility behavior, social and cultural factors. Thus, the explanatory variables include the personal demographics of women (age, education level, and marital status) along with social demographics (household size and economic status). The study investigates that how these variables can effect the women decision to participate either on-farm or off-farm.

These are the research questions that we seek to answer

- i) To explore the association of rural women participation in economic activity with marital status, household size, wealth status, education and age.
- ii) To explore the association of rural women participation on farm activity with marital status, household size, wealth status, education and age.

The paper is planned into five sections. The next section sheds light on significant literature about the topic in Pakistan and Malawi. The third section of the article is focused on characteristics and sources of data, definition of variables and methodology. The main findings are followed by a detailed section of empirical results and discussions.

Data and Methodology

The study exploits the cross-sectional data for both countries. We use the data of rural Pakistan and rural Malawi for the year 2007-8 to examine the female employment behavior in these two economies with the sample size 13142 households and 7686 households from rural Pakistan and rural Malawi respectively.

The two countries are different have differences in many aspects including their cultural norms, religion, education system, marriage pattern dynamics and preferences for the distribution of working hours by employment status so both countries under investigation are significantly different in all spheres of life under consideration. Our analysis is based on the Malawi

Longitudinal Study of Families and Health (MLSFH) and Pakistan Social and Living Standard Measurement Survey (PSLM). Following are the detailed information about both surveys.

Malawi Diffusion and Ideational Change Project (MDICP)/ Malawi Longitudinal Study of Families and Health (MLSFH)

The main data source used to analyze the employment pattern of young women in Malawi is Malawi Longitudinal Study of Families and Health (MLSFH; formally known as Malawi Diffusion and Ideational Change Project)³ which is a combine project of University of Pennsylvania, the University of Malawi, College of Medicine and Chancellor College (Chin,2010). MLSFH conducted in the three districts of rural Malawi and each district representing the three regions of the country: Rumphi located in the northern region, Mchinji located in the central region and Balaka representing the southern region of the country (Obare, 2005).

MDICP is a longitudinal panel survey whose first round was conducted in 1998 at which time 1541 ever-married women of childbearing age between 14-49 and 1065 husbands of the currently married women were interviewed (Phillip et al., 2009). The first follow-up wave of the MDICP conducted in the summer of 2001. During this round 1587 women and 1097 men were interviewed with the same respondents if they are eligible and all new spouses of men and women who remarried between 1998 to 2001(Watkins et al, 2003).

The next round of MDICP collected data in 2004 for the same respondents as in 1998 and 2001 with the addition of some never married adolescents and young adults of ages 15-25 which are approximately 1500. In 2006, the sample contains all respondents from previous three waves of 1998, 2001and 2004 along with spouses of the adolescents and young adults surveyed in 2004, all new spouses were also included in the original sample. In 2008 the next follow-up wave

³ Detailed information of project is available at <http://www.malawi.pop.upenn.edu>

collected data for the same respondents as with the previous waves and a new sample of approximately 800 living biological parents of MDICP/MLSFH. Approximately 53, 00 unique respondents were included between 2004 and 2008, with an average number of two surveys (Chin, 2010). However in this study we used only one wave of data that is of 2008.

The focus of the MDICP is to analyse the role of social networks in changing attitudes related family size, family planning, HIV/AIDS knowledge, and risk behavior with the basic demographic information e.g. age education income and wealth. The sites covered by the survey are primarily characterized by subsistence agriculture (Kohler et al, 2007) and the survey contains quantitative as well as qualitative data (Watkins et al, 2003)

Pakistan Social and Living Standard Survey (PSLM)

The analysis of the young female employment trend in Pakistan is based on Pakistan Social and Living Standard Measurement Survey (PSLM).The time for data collection of PSLM project is July 2004 to June 2015. The primary goal of PSLM is to study the Social and Economic indicators in the alternate year at provincial and district levels. It is conducted for all urban rural areas of four provinces and Islamabad excluding military restricted areas. At district level the survey collects information on key social indicators whereas at provincial level surveys (Social and HIES) are conducted to get information on Social as well as on Income and Consumption indicators with the sample size of approximately 8000 and approximately 17000 households respectively⁴

PSLM survey is a main source for providing a population based estimates of social indicators and their progress under Poverty Reduction Strategy Program (PRSP) and for Millennium Development Goals (MDG's). UN has set 18 targets for 48 indicators for its member countries to achieve MDG's by 2015 but for Pakistan UN has set 16 targets for 37 indicators out of which 15

⁴ <http://www.statpak.gov.pk/fbs/content/pakistan-social-and-living-standards-measurement>

monitored through PSLM survey. The data collected through this survey is used to assist the government in formulating the poverty reduction strategy and development plans. The data provide report information of these key indicators at national as well as provincial level with segregation by province, by region (urban-rural) and by gender.

Variables Description

Brief introduction of variables used in this analysis are as follow:

Dependent Variable

a. Female Participation in Economic Activity

The main objective of the study is to analyze the employment pattern of young women in rural Pakistan and rural Malawi, thus Female participation in economic activity (farm and off-farm) is the dependent variable. The data set form Pakistan and Malawi both provide information regarding economic activity or participation in labor market. This variable includes all those women of 15-45 years old who are currently participating in economic activity or seeking for work. Our basic concern is with their behavior towards participating in labor market.

FPEA= 1 if the female participate in economic activity and 0 if out of labor force

b. Female Participation in Farm Activity

Agriculture sector plays an important role in developing countries for the growth and poverty reduction. In sub- Saharan Africa more than half of rural employment is based on self-employed farmers and most of them are women (Adeniyi, L. 2010). In case of Pakistan majority of rural women work on households agricultural land (Sathar & Kazi 2000). Hence regarding the importance of farm work in both economies we explore the relationship of socio-economic variables with the Female Participation in Farm Activity (FPFA) as well. This variable is constructed as if once a women decided to join the labor market either she will be involved in on

farm activities or off farm activities. In case of Malawi, farm activities include agricultural workers (including animal care), own field, agricultural wage laborers, for cash or in kind. In case of Pakistan, all those women are considered as participating in farm activities who are working as own cultivator, share cropper, contract cultivator and live stock. This variable also include unpaid-family worker in case of Pakistan.

FPFA = 1 if the female participate in farm activity and 0 if participating in off-farm activities

Explanatory Variables

Women's decision to participate in labor market in rural areas is determined by the various aspects that are treated as independent variables in this study such as age, household size, wealth and marital status.

a. Age

The age group that has been chosen is 15-45 that is on the basis of childbearing age of females so this is the most important age in any female's life because during this age also going through their reproductive life cycle. The relationship between age and participation of female in labor market varies with age so the age group is divided further into 6 sub-groups for both data sets i.e. age1, age2, age3, age4, age5 and age6 for in-depth analysis.

Age1= 1 if the group of females belong to the age between 15-20 years and 0 otherwise

Age2= 1 if the group of females belong to the age between 21-25 years and 0 otherwise

Age3= 1 if the group of females belong to the age between 26-30 years and 0 otherwise

Age4 = 1 if the group of females belong to the age between 31-35 years and 0 otherwise

Age5= 1 if the group of females belong to the age between 36-40 years and 0 otherwise

Age6= 1 if the group of females belong to the age between 41-45 years and 0 otherwise

b. Household size

Household size is considered as very important determinant of female labor supply. We have taken household size as the total members of household living in one household. The more female labor force participation is expected with the large household size (Muhammad et al., 2009). The average household size is 8 and 14 in rural Pakistan and rural Malawi respectively⁵.

c. Wealth

Both data sets do not provide any direct information regarding wealth within households. Theoretically, there are different approaches to calculate household wealth except consumption/expenditure approach. In the rural set-up it can be calculated through three alternative methods (i) ownership of land (ii) Income (agricultural and non-agricultural) (iii) Durable assets within household. In this study we have opted the third method. There are some reasons to prefer this method on other two.

In any rural set-up, calculating wealth by landholding is considered very reliable one. But we did not select this method because Brain Chin (2009) mentioned in his article who worked on same data set of Malawi that there is a large measurement error in reporting of total acres of land owned by households. For instance, respondents give answers in different units of measurement⁶. The other method to calculate wealth of household is by collecting the data on income of rural household. We have not selected this option as well because in rural areas income is very volatile as major portion of income depends on agricultural crop production. Income will be high in the harvesting season as compared to the rest of the year so household income may be high due to harvesting season at the time of interview or vice versa so it does not depict the true picture. In case of Malawi, the data of MDICP collected from the three different regions of the country i.e.

⁵ Average Household size is much larger than the reported average household size by Population and Housing census of Malawi(2008)-possible reason for this difference might be due to the difference in definitions followed by both sources and data specification (only rural areas are included in this data set)

⁶ Either acres, hectares, or football pitch units and all football pitchers are not of same size

Balaka, Machinji and Ramphi. The issue is that these three regions specialize in entirely different crops⁷ and the units of crops are not comparable (Chin, 2009).

In this study we have chosen the last option i.e. measuring wealth based on household durable assets that capture the living standard of household. Although, asset-based measures are used extensively as this measure is useful to depict long-run household wealth. In this study, we have used Principle Component Analysis (PCA) to derive wealth index and have grouped these household into five categories by making wealth quintiles, reflecting different levels of wealth. The construction of this type of index by applying PCA on durable-assets is very useful for the purpose of comparisons to be made across countries, regions or communities (such as urban and rural). Malawi data set provide the information about certain durable goods in all households as categorical variable. However in case of Pakistan the monetary value of durable goods are provided. Thus we exploit that information to calculate household wealth quintiles. We have used these quintiles obtained from both data sets in our analysis. (See Appendix A)

PCA is not suitable for the data in categorical form (such as in Malawi data set the variables of durables goods are in the form of categorical variable i.e. Yes or No) because the categories are converted into a quantitative measure and then such categorical variables do not give any meaning. But this problem can be avoided by re-coding of such variables into binary variables so we have converted categorical variables (Yes or No) of data into binary variables (1, 0). Their conversion into binary variables does not change the relationship between variables nor add any additional variation or correlation in the data set. Rather, having individual variables, PCA can determine which of the particular durable goods can differentiate between household⁸.

⁷ Balaka specialized in cotton, Machinji in tobacco and wheat and Ramphi in tobacco and rice

⁸ See Vyas & Kumaranayake (2006)

Although, there is a critique that PCA is only suitable for continuous data and it does not justify the discrete variables as it was developed for the samples from multivariate normal distribution (Hotelling 1933, Anderson 2003, Mardia et al. 1980)⁹. Filmer & Pritchett (2001) were the one of the earliest development economist that applies PCA on discrete variables in the construction of socio-economic indices. In their study, a dummy variable was used for each category of the discrete variable. Later this methodology was opted in many studies of World Bank (Gwatkin et al., 2003a, 2003 b) to assess socioeconomic status of a household based on the household assets. Hence, PCA can be applicable on binary variables.

d. Education

Education plays a vital role in the decision to participate in labor market. To capture the effect of education we have taken the education variable as highest class passed at the time of data collection. For Malawian data set four education dummies has been generated for the following

- Edu_1=1 if female is illiterate or less than primary or 0 otherwise
- Edu_2=1 if female have completed Primary or 0 otherwise
- Edu_3=1 if female have completed Secondary or 0 otherwise
- Edu_4=1 if female have completed a Higher level of education or 0 otherwise

Female education is considered unimportant in several traditional societies in Africa so for many reasons girls easily drop out from schools while the boys continue to higher level (Bbaale, 2011).According to data illiterate or less than primary are 19.29 percent, 55.85 percent are primary, 20.34 percent are secondary and 4.51 percent are those who have done with high education.

As far as Pakistani data set is concerned five educational dummies have been used are as follow

⁹ For details consult Kolenikov, S. & Angeles, G.(2004)

- Edu_1=1 if female are Illiterate or less than primary 0 otherwise
- Edu_2=1 if female have completed Primary or 0 otherwise
- Edu_3=1 if female have completed Secondary or 0 otherwise
- Edu_4=1 if female have completed Intermediate or 0 otherwise
- Edu_5=1 if female have completed a Higher level of education or 0 otherwise

The analysis of data show that percent are illiterate or less than primary 14.13, percent are those who are done with their primary level of education 41.06, percent are those who have done with secondary 15.16, percent are those who have done with metric 19 and intermediate level of education 6.48 and 4.18 percent are those with high education.

e. Marital Status

Marital status is an important determinant while making a decision of labor market participation.

The data set from Pakistan and Malawi has used dummies as

- Ms_1=1 if female is Never married or 0 otherwise
- Ms_2=1 if female is currently married or 0 otherwise
- Ms_3=1 if female is Separated/divorced or widow or 0 otherwise

According to data analysis 32.55 percent females are never married in case of rural Pakistan though in case of rural Malawi 16.24 females lie in this category. In selected samples of both countries majority of the females are married i.e. 65.69 percent and 75.35 percent in rural Pakistan and rural Malawi respectively. In case of Pakistan only 1.48 percent women belongs to the last category whereas in case of Malawi 8.41 percent females belong to this category.

Table 1 reports the means and standard deviation of the variables for the selected sample of rural women from both countries.

[Table 1 here]

Estimation Method:

The study is estimating the women’s participation in economic activity of rural Pakistan and rural Malawi rather than estimating wage rate and hours worked¹⁰. The wage rate or working hours in rural areas and in informal sector fluctuate considerably, just considering if women is participating in economic activity is better option (See Khan & Khan, 2009). Thus, the study have just taken the decision making of rural women that either they are involved in any economic activities or not.

The Probit Model

The probability of decision regarding female participation in economic activity is estimated through following model specification, where the dependent is a binary variable so probit model which is a binary response regression model is used:

$$\text{Prob}(=1 \text{ if participating in labor market and } =0 \text{ otherwise}) = \frac{e^{X\beta}}{1+e^{X\beta}} = [1 + e^{(-X\beta)}]^{-1} \dots\dots\dots(1)$$

In this study basically we estimate two probit equations to explain the behavior of FPEA and FPFA that are dichotomous dependent variables. In the probability model, both the dependent variables is a function of several explanatory variables. FPEA and FPFA are determined by different individual’s characteristics such as age, the education level and marital status and some household characteristics such as household size and wealth status. Further, to capture the effect of age on participating decision we have introduced six different age cohorts. The educational effect and effects of marital status are captured through dummies. Wealth is based on durable

¹⁰ In existing literature wage rate and working hours are used as a proxy for employment status (for examples Azid et al, 2001 and Hartog & Theewes, 1986).

goods and enters in the model in form of five different quintiles; lastly household size is a continuous variable controlling the total number of individuals living in that household.

Thus, the variable determining the probability of women for participating in any economic activity (FPEA) is depending upon above mentioned explanatory variables.

The exact specification of the model is as follows:

$$P(Y_i=1 \text{ if participating in any economic activity and } =0 \text{ if out of labor force}) = f(\text{HHsize, Age2, age3, Age4, Age5, Age6, Education, Marital Status, and Wealth}) \dots\dots (2)$$

In the above equation Y_i denotes FPEA. It can take only two binary values: Y is equal to 1 if a woman is participating in economic activity and zero if she does not.

The variable determining the probability of women for participating in farm activity is depending upon the same explanatory variables. Thus the exact specification of the model is as follows:

$$P(Y=1 \text{ if participating in farm activities and } =0 \text{ if participating in off-farm activities}) = f(\text{HHsize, Age2, age3, Age4, Age5, Age6, Education, Marital Status, and Wealth}) \dots\dots (3)$$

Here Y_i denotes FPPA. It can take only two binary values: Y is equal to 1 if a woman is participating in farm activity and zero if she does not.

First of all we attempt to examine the effect of women age, education level, marital status, household size and economic status/household wealth on the women decision to participate in economic activity through equation 2 for Rural Pakistan and Rural Malawi. Later we examine that how all these variables influence the women's decision to participate in on-farm or off-farm economic activities with the help of equation 3 for both countries of interest.

Empirical Results and Discussion

The focal point of the study is to analyze how the personal and social demographic these factors determine women decision to participate in labor market; to explore the issue we worked on two stages. At first stage we tried to find out the determinants of female participation in economic activity and for this purpose we included all those women participating in economic activity. At second stage we focused on if once they decided to join the labor market either they will be involved on farm activities or off farm activities. Such type of analysis will help to understand women attitude toward work.

Almost all coefficients are statistically significant at conventional levels. This chapter presents the results of the probit estimation of the dependent variables that is FPEA and FPFA for rural areas of both countries under consideration. This chapter is divided into two parts. First part contains the analysis of rural Pakistan and the second part presents the analysis of rural Malawi.

Empirical Analysis I: Female Participation in Economic Activity

This section of the paper presents the analysis of only those women of rural Pakistan and rural Malawi who is reported as employed in any economic activity. Probit results of FPEA of both countries are present in table 2.

Female Participation in Economic activity in Rural Pakistan

The age of female is very crucial factor for labor force participation decision. In order to capture the effect of age on female labor force participation it is divided in different age cohorts. For this purpose, we have introduced 6 age groups (15-20, 21-25, 26-30, 31-35, 36-40, and 41-45). The age group of 15-20 years (Age1) is taken as base category. The estimated parameter of Age2 (21-25) has no significant impact on FPEA as compared to Age1 group. The estimated

coefficient of Age3 turns out to be positive and significant. Other estimated parameters of age i.e., Age4, Age5, Age6 are also positive and highly significant at 1% level of significance so women participation in economic activity increases with increase in age. Thus, the age profile in this study followed the familiar pattern found in many earlier studies (see for example: Naqvi and Shahnaz, 2002; Loksnin et al, 2000). A simple interpretation of this result stems from the possible aspect of greater proportion of working women with increasing age is that they have completed their family size and the presence of grown up children in household to look after household chores could actually be an incentive for women to leave home and active in labor market. In the traditional society of rural Pakistan older women face less social constraints because of the increasing empowerment with age so it is relatively easy for them to go outside for work (Sather & Kazi, 2000).

The female level of education is considered as most important factor which determines the female decision to become a part of labor market activities. Human capital theory regards participation in education as an investment in human capital because of the expected returns later in life (Becker, 1964). Thus, the people who are more educated are considered as more well-equipped with knowledge and skill. The study assumes Edu_1 (illiterate or less than primary) as a base category. The coefficient of Edu_2 is negative and insignificant so the study found that primary education has no influence on FLFP. The probability of female participation in labor market do not enhance with such basic level of education. The estimated parameter Edu_3 is negative and statistically significant at 1% level of significance. This result implies that women with secondary level of education are less likely to participate in labor market. This is so because women with secondary education are unable to get jobs as this level of education is not a sufficient even for lowest category jobs. The coefficient Edu_4 (metric or intermediate) turns out

to be positive and significant at 5% level of significance so the female participation in labor market increases with the increase in education. The coefficient of higher education (Edu_5) also has positive and significant impact on FPEA. Provision of education enhances the job prospects for everyone as they are better-trained to increase productivity. Results indicate that a rise in education level beyond secondary level of education increased the probability of females to active in labor market whereas less educated females are discouraged from entering in labor market (see Naqvi & Shahnaz, 2002; Faridi et al, 2009).

Marital status is another factor, which influences the female labor force participation (Hafeez & Ahmad, 2002; Lee et al 2008). The study assumes unmarried female (Ms_1) as base category. As compared to unmarried females the coefficient of married women (Ms_2) is negative and significant at 10% level of significant so this implies that married women are less likely to participate in economic activity. In household model of labor supply, marriage is considered a cause to create difference in men and women labor force participation. The household model suggests that each person should allocate an additional hour to home work as long as its value exceeds the monetary value received from an hour of work at a paying job. After marriage women's value of time spent at home increases due to child bearing and raising activity. So their opportunity cost to participate in nonmarket activities increases and they will prefer to stay at home. Empirical studies also supports this result that women participation in labor market falls due to increasing responsibility at home (Chamlou et al 2011; Esfahani & Shajari, 2011). Another estimated parameter Ms_3 have no significant impact on FPEA so widow and divorced does not increase the probability of FLEA as compared to base category, the most likely reason for this result is social networking in rural areas. In rural areas of Pakistan widows are given

respect and care from family members and usually other family members are responsible for their economic burden.

Household size has positive influence on FPEA but the results are insignificant. The study's findings are similar to the findings of Faridi et al (2009) as they concluded that household size is not too much important but family set up is more crucial for women to take a decision to be active in economic activities¹¹. According to Khan & Khan (2009) household size and family set up are inter-related concepts.

The economic status of the household is another important factor that determines the female labor force participation. In this study the current market value of durable goods of households are considered as a proxy for family wealth. Further the study explored the wealth effect on FPEA by making wealth quintiles. The quintiles are arranged in ascending order so the wealth holding increases within households with successive wealth quintiles, so the first quintile (Wealth_1) contains that group of households which hold lowest wealth and the last quintile (Wealth_5) consist of that group of household which hold maximum wealth within the selected sample. The study found that women participation decision in economic activity is inversely and strongly influences by family wealth as wealth quintiles (Wealth_2, Wealth_3, Wealth_4, and Wealth_5) are negative and significant as compared to Wealth_1. Thus, the result implies that the women living in more wealthy families are less likely to participate in the economic activities. Theoretically, the income effect is negative with an increase in income the workers desires more leisure and less working hours. Sahn and Alderman (1998) studied that socio-economic status of a family has a negative effect on FPEA (See also, Faridi et al 2009; Hafeez &

¹¹ There are certain limitations here while introducing this variable in the analysis. If the variable of household would have been explored probably we would come up with slight different results. For example the proportion of children and proportion of older people in household would give different results. This is also suggested in future research agenda.

Ahmad, 2002; Hamid (1991)). The poor economic status of household indicate the need for additional economic source in the household so higher economic needs involve more women in economic activity and the households with higher incomes drive less women to participate in economic activity

Female Participation in Economic Activity in Rural Malawi

The same approach is followed to investigate the effect of age on Malawian female labor force participation by segregation of age into 6 age groups (15-20, 21-25, 26-30, 31-35, 36-40, and 41-45). The age group of 15-20 years (Age1) is considered as base category. As compared to Age1 the estimated parameters of age i.e. Age2, Age3, Age4, Age5, Age6 are positive and significant at 1% level of significance. However, the significance of the results increases with increasing age cohorts, so women participation propensities increase in economic activity with successive age cohorts. The results suggest capturing the salient development in female labor supply in economic activity within age-cohorts.

The estimated coefficient of education show a positive relationship between education attainment and the probability of women being engage in any economic activity, as human capital theory attributes individual's participation in labor market increases with their level of schooling as its opportunity costs increases for staying free. Relative to the reference category Edu_1 (illiterate or less than primary), the estimated coefficient Edu_2 is positive and significant so the study found that primary education has positive influence on FPEA. The estimated parameter Edu_3 & Edu_4 are also positive and statistically significant at 1% level of significance. Our results are consistent with the findings of Ackah (2011, for Ghana), Maglad (1998, for Sudan), Bbaale & Mpuga (2011, for Uganda).

Another variable used to investigate the influence on FPEA is Household size. It has negative influence on FPEA but is insignificant. The result reveals that household size has no influence on FPEA. This is probably because with larger household size many family members are working due to surplus of labor supply within household, thus female are less likely to participate in labor market activities. The other possible fact that workload of household chores for female members increases due to large family size so they have no time left to participate in labor market.

Marriage is quiet complex and not a static institution in Rural Malawi because marriage aspiration is related to HIV/AIDS. In Malawi HIV/AIDS prevalence among adults exceeds 10% (Clark et al, 2009) so the adults attempt to achieve a dual goal of avoiding HIV/AIDS and finding a suitable partner (Clark et al, 2007). The study assumes never married female (Ms_1) as base category. Another estimated parameter of currently married Malawian women (Ms_2) has positive and highly significant impact on FPEA. The results reveal that the proportion of married women in labor market is high as compared to never married. In Malawian set up, after marriage it is their responsibility to bear family expenses along with household chores. Gary Becker's (1981) proposed a theory based on 'production complementaries' in which husband and wife specialize in the market and domestic spheres, respectively, and hence more productive together than apart. As compared to never married females the coefficient of separated and divorced women (Ms_3) is positive and significant at 1% level of significance so this implies that separated and widow women are more likely to participate in economic activity.

In this study the number of durable goods of households is considered as a proxy for family wealth. Further the study explores the wealth effect on FPEA by making wealth quintiles. The quintiles are arranged in ascending order so the wealth holding increases within households. So the first quintile (Wealth_1) contains that group of households who hold lowest wealth and the

last quintile (Wealth_5) consist of that group of household who hold maximum wealth within the selected sample. Wealth_1 is considered as base category. Wealth_2 shows positive and significant results with comparison to base category. As the people lie in this quintile are not very rich so they are more likely to participate in economic activities. Other estimated parameters of wealth i.e. Wealth_3, Wealth_4, Wealth_5 are negative and significant at 1% level of significance as compare to reference category. The study found that women participation decision in economic activity is inversely and strongly influences by family wealth. Thus, the result implies that the women living in more wealthy families are less likely to participate in the economic activities. This variable also shed light on the link between female participation and poverty (Pastore & Yerashchagina, 2008) as the member of poorer family tend to be more active in labor market due to necessity rather than choice.

Empirical Analysis II: Female Participation in Farm Activity

This section of the paper contains the analysis of only those women of rural Pakistan and rural Malawi who is reported as employed in farm activity. Probit results of FPFA are present in table 3.

Female Participation in Farm Activities in Rural Pakistan

The probit results of the coefficient of variable of Age are slightly different to the earlier probit results with the same base category (Age_1). The estimated parameter of Age2 has negative and significant impact on FPFA at 10% level of significant. The negative impact of Age2 on FPFA indicated that this age group of female is considered to be less active because of early age marriages in rural areas. This is the most intensive child-bearing age and they might have not yet completed their lives reproductive cycle so they are less active in work outside. Another explanation for the less participation of younger women is lack of experience and skill. Social

taboos also exercise a strong influence so because of restrictive social norms younger women behave differently from the older ones. Other coefficients of Age3, Age4, Age5 and Age6 have no significant results so this implies this implies that after 25 years of age the female activeness on farm is not affected by age.

According to Fafchamps and Quisumbing (1997) better education is important for off- farm income and better education divert labor resources away from farm activities toward off-farm work. The coefficient of education followed the similar fashion: as compared to Edu_1 all educational dummies have negative results. The estimated coefficient of Primary education (Edu_2) is negative but insignificant so primary education level has no significant influence on female farm activity. Other two dummies of education Edu_3 and Edu_4 are negative and significant at 1% level of significant so with the increase in education level women are less likely to participate in farm activities. They would prefer to join non-agricultural jobs. The other coefficient of Edu_5 gives no result as according to data there is not even a single highly educated woman who is participating in farm activity.

The coefficients of household size have a strong positive correlation with FPFA as in most studies large household size is considered to be a positive influence on female decision to participate in labor market. This is so, because female participation in farm activities probably rises due to substitution and sharing of home keeping and child-care with the other household members so the pressure of household chores reduces and women can afford to come out of home. Another reason for a positive relation of large household size with increasing FPFA is may be that the financial burden is high in household comprising of more members so economic pressure on family compel the females to join the farm activates (Khan & Khan, 2009).

Another finding of the study is that marital status of women also determines the women participation on agricultural land. The study considers never married women as base category so with comparison to Ms_1 the estimated parameter of married women (Ms_2) gives positive and significant results. This result is turns out to be opposite to the above result so married women are more likely to participate in farm activity in rural economies. One possible reason for this is in rural societies unmarried women are socially not encourage to come out and do work on farm due to social limitations. Another estimated parameter for widow and divorced (Ms_3) has no significant impact on FPFA

The study found wealth effect on FPFA is similar to the women decision to participating in any economic activity. All coefficients of wealth (Wealth_2, Wealth_3, Wealth_4, and Wealth_5) are negative and statistically significant as compared to Wealth_1. The estimation results show that the improve family wealth reduce the probability of women activity on farm suggesting that rural women is less likely to engage in farm activities when there is not compelling financial needs to work.

Female Participation in Farm Activities in Rural Malawi

The probit results of estimated coefficient of variable of Age vary with increasing age with the base category Age1. The estimated parameters of Age2, Age3 and Age4 has positive and insignificant impact on FPFA so this implies that the females who lie between 21-35 years of age do not affect the female activeness on farm. The estimated parameter of Age5 turns out to be positive and significant so the women who belong to the age group of 36-40 years of age are more active on-farm. The estimated coefficient Age6 found positive and highly significant results so this age group has a strong positive influence on FPFA.

As compared to the base category Edu_1, the coefficient of primary education (Edu_2) is positive but insignificant. The positive sign shows that with such basic level of education, female do not hesitate to participate in farm activities but it does not influence the variable of FPFA considerably. Other two dummies of education Edu_3 and Edu_4 are negative and significant so with the increase in education level women are less likely to participate in farm activities which are consistent with the findings of Srivastava, N. & Srivastava, R., 2009. According to their study, Education may not positively influence women participation in farm activity, but for the women who are involved in non-agriculture activities education is one of the most important determinant. It means the women with more education they would prefer to join non-agricultural jobs.

The estimated coefficient of household size has negative influence on FPFA but the results are insignificant. The negative sign of the outcome shows that with increasing household size the female participation in farm activities decreases. One possibility of this decrease in female participation is that there are enough hands to work on farm so there are many people to share the financial burden of the huge family so it is not necessary for them to go out and work on farm. But the results are insignificant, so household living arrangements are worth investigating in depth.

Marital status of women is a strong determinant that influences female farm labor supply. The study assumes Ms_1 (Never married women) as the reference category. The study found the estimated parameter of currently married women (Ms_2) give positive and significant result at 1% level of significance with comparison to Ms_1. Another estimated parameter of separated or divorced women (Ms_3) has also positive and significant impact on FPFA. Working on farm is usually a family economic activity as agricultural land is usually owned by family or husband.

The traditional kinship-oriented family system in Africa and high fertility has been the factors to enhance the women participation in farm activities (Benefo & Pillia, 2003). The positive influence of currently married and separated or divorced on FPFA is may be due to women may gain easy entry into the informal economy managed by kinship- base social networks.

The study found wealth effect on FPFA is opposite to the results of the women decision to participating in economic activity. The study considers Wealth_1 as base category which is the poorest quintile. All coefficients of wealth i.e. Wealth_2, Wealth_3, Wealth_4, and Wealth_5 are positive and statistically significant as compared to Wealth_1. It implies that wealth has a positive impact on female participation in farm activity that is similar to Chamlou et al, 2011. We came to know by exploring the mean of FPFA 59 percent rural women involve in subsistence farming. This is may be due to the fact that in rural Malawi most of the people depend on agriculture for their livelihood. They do not consider any harm or shame for women to work on their own farm or work as wage laborer.

Main Findings of the Study:

The key motivation behind this study was to examine the employment pattern among women during their child-bearing age (15-45) using comparative study approach. The study provides the comparison between two different economies i.e. rural Pakistan and rural Malawi .The analysis was based on cross-sectional data drawn from MLSFH and PSLM for year 2007-08 .The probit model was used to examine the impact of various personal demographic (age, education level, marital status) along with some social demographic (household size, economic status) determinants on female participation in economic activity. The focus of the study was to analyze how these factors determine the women decision to participate in any economic activity and

furthermore it was studied that how these factors influence the women decision to participate on-farm activity for both countries under consideration.

The major findings of the study showed that these demographic and individual characteristics influence women participation in both countries. It has been observed some contrast in results of both countries but some results are found to be similar for both countries. The coefficient of age was positive and significant for female decision to participate in any economic activity for both countries. In the case of decision to participate on-farm activities, the coefficient of age is different across Pakistan and Malawi –it showed that Malawian farm laborers are not affected by younger age cohorts but in case of Pakistan, younger age cohorts leaves negative impact on FPFA and after 25 years of age there is no affect on female decision to participate on-farm. Household size was important for Pakistani women while deciding to participate in farm activities as participation increases with the increase in household size. However, household size has no impact on Malawian women’s decision either to take part on-farm or off-farm economic activity. Economic status leaves a negative influence on FPEA for both countries but the results are dissimilar in case of FPFA for both countries-Pakistani women are less likely to participate on-farm with improving wealth status while wealth status has a positive impact on the participation of Malawian women on farm. All levels of education has a positive influence on Malawian women to take a decision to participate in economic activity but in case of Pakistan, a rise in education level beyond secondary level of education increased the probability of females to active in labor market. The variable of education showed similar results in both countries- It has been found that primary level of education have no effect on the FPFA but a rise in education level after primary level of education discourage the female participation on farm. It has been

revealed that married Malawian women were economically more active to participate in any economic activity while the results are opposite in case of Pakistan.

Limitations of the Study:

Study does not include the number of children, their ages and gender. The major reason of not including the children in the estimation was to maintain a consistency between two data sets as data from Malawi do not clearly provide this information. In Malawi data many other kids those who are not biological children of their present. Hence we have not included this variable in both analysis. Another limitation of the study is that it do not attempt for correction of selectivity bias.

Further Research:

Further insight into women's labor force participation decision in Rural Pakistan and Rural Malawi will be provided by inclusion of more socio demographic variables which has not been done previously such as husband's characteristics, household headship, presence of small children and fertility rate (as suggested by Becker's famous quality-quantity of children model). Another potential suggestion for further research (apart from those discussed in section 6.1) might be to explore the women empowerment in two economies.

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Table 1: Descriptive Statistics -Means and Standard Deviation of Variables

Variables	Pakistan				Malawi			
	Mean	Std. Dev	Min	Max	Mean	Std. Dev	Min	Max
FPEA	0.205	0.379	0	1	0.871	0.334	0	1
FPFA	0.130	0.300	0	1	0.591	0.491	0	1
Education	4.510	1.107	1	5	1.841	0.600	0	3
Wealth	2.825	1.411	1	5	2.106	1.419	1	5
HHsize	8.602	4.218	1	34	14.603	5.139	1	25
Mari_Status	1.689	0.493	1	3	1.408	0.752	1	3
Age1	0.316	0.465	0	1	0.247	0.431	0	1
Age2	0.184	0.387	0	1	0.196	0.397	0	1
Age3	0.166	0.372	0	1	0.179	0.383	0	1
Age4	0.118	0.323	0	1	0.126	0.332	0	1
Age5	0.124	0.330	0	1	0.131	0.338	0	1
Age6	0.0894	0.285	0	1	0.118	0.323	0	1
Sample Size	13142				7686			

Table 2: Estimates of Probit model for female participation in economic activity in Rural Pakistan and Rural Malawi

	FPEA in Rural Pakistan	FPEA in Rural Malawi
Variables	Coefficients &Std. Errors	Coefficients &Std. Errors
Constant	-0.6199*** (0.0410)	1.3885*** (0.1169)
Hhsize	0.0021 (0.0032)	-0.0056 (0.0052)
Age2	0.0092 (0.0423)	0.2693*** (0.0764)
Age3	0.1492*** (0.0466)	0.5637*** (0.0947)
Age4	0.2206*** (0.0507)	0.7260*** (0.1218)
Age5	0.3055*** (0.0508)	0.7349*** (0.1148)
Age6	0.2280*** (0.0554)	0.7705*** (0.1221)
Edu_1	Omitted Category	Omitted Category
Edu_2	-0.05772 (0.0431)	0.5065*** (0.0577)
Edu_3	-0.1445** (0.07281)	1.1979*** (0.1260)
Edu_4	0.2087*** (0.0528)	1.2506*** (0.0740)
Edu_5	0.7947*** (0.1087)	---
Ms_2	-0.05673* (-0.3834)	1.9235*** (0.0686)
Ms_3	-0.0089 (0.1063)	1.4967*** (0.1077)
Wealth_2	-0.1672*** (0.0349)	0.0518** (0.0902)
Wealth_3	-0.3808*** (0.0390)	-0.2127*** (0.0863)
Wealth_4	-0.5918*** (0.0402)	-0.2536*** (0.0875)
Wealth_5	-0.6806*** (0.0459)	-0.3146*** (0.0850)
	N=13142 Pseudo R ² =0.037 Log Likelihood=-6452.7656	N=7413 Pseudo R ² =0.051 Log Likelihood=1377.4077

Note: *** indicates 1%, ** 5% and * 1% level of significance respectively
Standard Errors are in parenthesis

Table 3: Estimates of Probit model for female participation in farm/off Farm activities in Rural Pakistan and Rural Malawi

	FPFA in Rural Pakistan	FPFA in Rural Malawi
Variables	Coefficients & Std. Err	Coefficients & Std. Err
Constant	-0.1791 (0.1443)	0.2808** (0.0768)
Hhsize	0.0290*** (0.0080)	-0.0042 (0.0032)
Age2	-0.0956* (0.0880)	0.0175 (0.0552)
Age3	-0.1698 (0.0497)	0.0588 (0.0572)
Age4	0.05737 (0.1011)	0.0307 (0.0622)
Age5	0.06980 (-0.0998)	0.1242** (0.0623)
Age6	0.0631 (0.1098)	0.2720*** (0.0648)
Edu_2	-0.09216 (0.1502)	0.0545 (0.0438)
Edu_3	-0.5752*** (0.0892)	-0.1110** (0.0559)
Edu_4	-1.2728*** (0.1286)	-0.6994*** (0.0872)
Edu_5	Omitted Category	Omitted Category
Ms_2	0.4456*** (0.0804)	0.4550*** (0.7086)
Ms_3	0.0173 (0.1988)	0.2497*** (0.0708)
Wealth_2	-0.2026*** (0.0642)	0.1117** (0.0523)
Wealth_3	-0.1745*** (0.0766)	0.1494*** (0.0525)
Wealth_4	-0.0469*** (0.0881)	0.1609*** (0.0532)
Wealth_5	-0.1859*** (0.0988)	0.1674*** (0.0548)
	N= 2720 PseudoR ² =0.068 Log Likelihood=-1707.4933	N=6485 Pseudo R ² =0.0244 LogLikelihood=-3937.9905

Note:***indicates 1%, ** 5% and * 1% level of significance respectively
Standard Errors are in parenthesis