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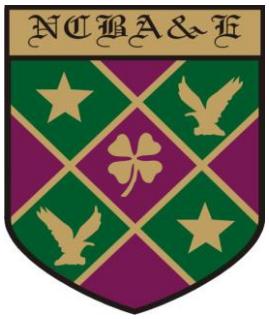

ROLE OF HUSBAND'S EDUCATION ON FEMALE LABOR FORCE PARTICIPATION: A CASE STUDY OF PAKISTAN

BY

SHAFAQAT ALI

MASTER OF PHILOSOPHY
IN
ECONOMICS

JUNE, 2022

NATIONAL COLLEGE OF BUSINESS ADMINISTRATION & ECONOMICS

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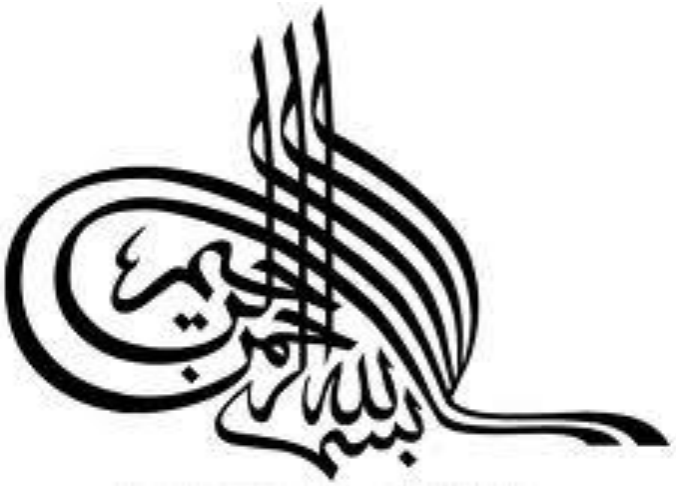

In the name of ALLAH,
The Most Beneficial,
The Most Merciful,

NATIONAL COLLEGE OF BUSINESS ADMINISTRATION & ECONOMICS LAHORE

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A dissertation submitted to Faculty of Social Sciences, in partial fulfillment of the requirements for the degree of

MASTER OF PHILOSOPHY IN ECONOMICS

Dissertation Committee:

_____
Chairman

_____
Member

_____
Member

_____
Director Research
National College of Business Administration & Economics

DECLARATION

It is to declare that this research work has not been submitted for obtaining similar degree from any other university/college.

SHAFAQAT ALI
JUNE, 2022

DEDICATED TO

My beloved Mother and

an affectionate Father

who taught me the first word

to speak the first alphabet

to write and first step to take.

ACKNOWLEDGEMENT

All praises to Almighty Allah who has given us the wisdom and knowledge to identify the right path and reach the truth. I express my profound feelings of gratitude and indebtedness to my honorable supervisor, Dr. Mussarrat Khadija Khan, for her ever-inspiring guidance and constructive suggestions throughout my research work being my supervisor.

I am also thankful to Professor Dr. A.R Chaudhary and Dr. Zahid Pervaiz who taught me econometrics, which enabled me to practically apply the econometric techniques in my research work. I am also thankful to my classmates Muhammad Farhan Asif and Ahsan Anwar for their valuable suggestions and relevant discussions. Special thanks to my family for their endless kindness, without them; I would not be able to complete this task.

Genial love, wishes, and thanks are tendered for my all friends; as they always have remained my inner strength and support. They have always shown faith in my dreams.

RESEARCH COMPLETION CERTIFICATE

Certified that the research work contained in this thesis entitled **"Role of Husband's Education on Female Labor Force Participation: A Case Study of Pakistan"** has been carried out and completed by **Shafaqat Ali** under my supervision during his **M.Phil. Economics** Programme.

(Dr. Zahid Pervaiz)
Supervisor

SUMMARY

Female labor force participation in Pakistan is generally in the informal sector. They are mostly working from home or are in the agriculture sector. Their participation in the formal sector is extremely low. A number of reasons have been explored by different scholars. As male plays a pivotal role in female labor participation specifically in this subcontinent region. The objective of this study is to analyze the moderating role of husband education on the female labor force participation. The data is obtained from PDHS 2017-18. To check the moderating role of husband education on female labor force participation, a binary logistic technique is applied.

The results of this study show that the odds of female labor force participation (FLFP) are higher among women belonging to age group 15-39 and at least have secondary education than those who have less than secondary education. Similarly, the likelihood of FLFP is higher among women who have ownership of land/house as compared to those women who have no ownership of land/house. The result indicates that woman who belongs to richest household is less likely to participate in the labor market than poorest household. Those women who are head of the household are more likely to participate in the labor market than the male head of the household. The probability of FLFP is less among those women who have more children than those who have fewer children.

The odds of FLFP are less among those women whose husband is at least secondary educated. Similarly, the probability of FLFP is less among women whose husband is employed than those whose husbands are currently unemployed. The odds of FLFP are higher among those women who reside in rural areas than those who belong to urban areas. The likelihood of FLFP is higher among those women who belong to Punjab and Sindh region than those who belong to ICT. In contrast, the likelihood of FLFP is lower among women who belong to KPK, Baluchistan, GB, AJK and FATA region as compared to ICT.

The moderating role of husband's education on the relationship between women's education and FLFP is more distinct and positive when the husband's education is higher rather than lower education. Moderating role of husband's education on the relationship between place of residence and FLFP is more distinct and negative when the husband's education is higher rather than lower education. The study concludes that the role of husband is more important to enhance FLFP in Pakistan.

LIST OF ABBREVIATIONS

FLFP	Female labor force participation
PDHS	Pakistan Demographic and Health Survey
ISSP	International Social Survey Program
PCA	Principal Component Analysis
PSLM	Pakistan Social and Living Standard Measurement
OLS	Ordinary Least Square
CHNS	China Health and Nutrition Survey
WA	Women's Age
WED	Women's Education
HED	Husband's Education
HES	Husband's Employment Status
NLC	Number of Living Children of Women
WSH	Wealth Status of Women's Household
RR	Region of Residence
PR	Place of Residence
GHH	Gender of Head of Household
OLH	Ownership of Land/House
PBS	Pakistan Bureau of Statistics
GDP	Gross Domestic Product

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CHAPTER 1

INTRODUCTION

1.1 BACKGROUND

Women's access to work and education opportunities contributes to family poverty reduction, while resources in women's hands have a variety of beneficial effects on human capital and capacities inside the home (Kabeer, 2003; Dwyer and Bruce, 1988). Women's involvement in growth processes has a strong instrumental rationale: it will help to growth's inclusivity, not only because women make up half of the world's population, but also because women's access to economic resources enhances household distributional dynamics (Kabeer, 2012). Positive household shocks such as an increase in male earnings have a negative effect on FLFP. On the other hand, FLFP increases with negative household shocks such as flood or drought (Agarwal, 2017).

According to the World Bank, out of total females, the FLFP rate is 55 percent in the US, 61% in Canada, 61% in Australia, 53% in Korea, 53% in Japan, 35% in Bangladesh, 31% in Sri Lanka, 79% in Nepal and 21% in Pakistan (World Bank, 2021).Many factors affect FLFP positively and negatively. The effect of women's education on FLFP is positive and significant. Husband’s education has both positive and negative effect on FLFP. It is expected that those women whose husbands are educated are more likely to participate in labor market (Faridi et al., 2009). In contrast, it is expected that husband’s education has negative impact on FLFP (Ali et al., 2020).

Women’s age, family size, husband's health status, source of income has a positive and significant impact on rural women labor supply, on the other hand, family type, purdah observed, number of children and female head of house found to be negative and significant impact on rural women labor supply. (Awan et al., 2015).In addition, female education has a positive impact on women employment. On the other hand, childcare responsibility, more duty time, and low wages affect FLFP negatively and vice versa (Hare, 2016; Klasen, 2019). Further, politically connected women are more empowered to participate in FLFP and household decisions making (Deinger, 2020).

Several authors have examined the FLFP in household production model. Becker (1965) examined the household production model and it is

based on the theory of time allocation. Females divide their time between household responsibilities and labor force activities to maximize their utility function. However, educational attainment gave benefits to women both at home and at the workplace. The market benefits offered to females include an increase in market wages and earnings. Non-market (household) benefits include personal and family benefits through increased home-based activities. An increase in the market wage rate reduces the amount of labor done at home and has a mixed effect on leisure and market labor hours (Becker, 1965 and Gronau, 1977).

The literature is enriched about the determinants that can affect FLFP, such as women's age, education, health and empowerment, husband's education and employment status, the number of children, wealth status and gender of the head of household, region of residence, and ownership of land/house (Klasen, 2019; Chen et al., 2014; Riaz and Nadeem, 2019; Ijaz, 2011; Afzal and Bibi, 2012; Faridi et al., 2009;Contreras and plaza, 2010; Goksil, 2013; Awan et al., 2015; Hare, 2016;Becker, 1965; Aguero and Marks, 2008; Busso and Fonseca, 2015; Grantham, 2012; Suh, 2017; Mulugeta, 2021; Demirhan and Demirhan, 2017).

This study will therefore, investigate the moderating role of a husband's education on the relationship between women's education and FLFP as well as role of husband' education on the relationship between place of residence and FLFP. According to my knowledge in previous studies, the independent role of husband's education on FLFP has been discussed but the moderating role of husband's education is hardly been discussed, particularly in Pakistan.

1.2 PROBLEM STATEMENT

Women's participation in economic activities helps to understand the productive role of the female population. It can help to eradicate household poverty and boost economic development of a country. The dominant and essential role of men in household decision-making regarding female employment has been persistently recognized (Sathar and Kazi, 1997). Females in the region of subcontinent are more dependent and can hardly make decision independently regardless as a young girl or an older woman. During childhood, a girl is the responsibility of her father, after getting married mostly at the disposal of her husband, in case of the death of her husband usually dependent on sons (Wadley, 1988). However, detailed literature is available on socio-economic determinants of FLFP. Still, it has hardly focused much on the supportive role of the husband, especially in the social setup of subcontinent like Pakistan and India. This study throws light on various factors

that can affect FLFP. The main objectives of this study are to investigate the moderating role of husband's education on women's education with FLFP and husband's education on place of residence with FLFP of Pakistan. In previous studies the role of husband's education has been considered independently being a determinant of FLFP but not considered jointly with women's education and place of residence to determine FLFP. According to the best of my knowledge, this type of relationship has not been discussed particularly in the case of Pakistan.

1.3 OBJECTIVES OF THE STUDY

The objectives of the study are:

1) To investigate the moderating role of husband's education on the relationship between women education and FLFP in Pakistan.

2) To investigate the moderating role of husband's education on the relationship between place of residence and FLFP in Pakistan.

1.4 RESEARCH QUESTIONS OF THE STUDY

This study is going to answer the following research questions:

1) What is the moderating role of husband's education on the relationship between women education and FLFP in Pakistan?

2) What is the moderating role of husband's education on the relationship between place of residence and FLFP in Pakistan?

1.5 HYPOTHESES OF THE STUDY

Following hypotheses shall be tested for this study

1) Husband's education does not play a moderating role between women's education and FLFP.

2) Husband's education does not play a moderating role between place of residence and FLFP.

1.6 SIGNIFICANCE OF THE STUDY

There are many studies on the determinants of female labor force participation in Pakistan (Riaz and Nadeem, 2019; Ejaz, 2007;Hussain et al., 2016; Faridi et al., 2009; Awan et al., 2015; Sarwar and Abbasi, 2013). To the best of my knowledge; hardly any study addresses the impact of moderating role of a husband's education on FLFP. This study is an attempt to investigate the moderating role of husband's education on the relationship between women education and FLFP as well as the moderating role of husband education on the relationship between place of residence and FLFP in Pakistan by utilizing a dataset of Pakistan Demographic and Health survey 2017-18. The findings of the study will help to explore the supportive role of husband's education in FLFP. Further it will also facilitate the policy makers to devise suitable policies to enhance FLFP.

1.7 ORGANIZATION OF THE STUDY

Besides chapter 1 which presents the introduction of the study, chapter 2 presents the literature review and theoretical framework. Methodology is given in Chapter 3. Empirical results and discussion are taken up in Chapter 4. Chapter 5 presents the conclusion of the study and provides some policy recommendations.

CHAPTER 2

LITERATURE REVIEW AND THEORETICAL FRAMEWORK

2.1 LITERATURE REVIEW

In general, females consist of a sizable proportion of the population globally. They need a great deal of consideration for the country's economic growth. The labor trends show consistent growth in women's labor force participation, predominantly in the second half of the century.

Faridi et al. (2009) discussed the socio-economic and demographic determinants of women work participation in Pakistan: Evidence from Bahawalpur district. Data for this study was gathered from a field survey performed in Bahawalpur district, for this purpose simple random sampling technique was used. A sample of 164 female workers in the age group of 15-64 years is randomly drawn from rural as well as urban areas of Bahawalpur district. Educational levels are significant and have positive impact on female labor force participation except basic education level up to middle. The study concludes that, educational level (except middle), Family Setup, Marital Status, number of children and presence of educated husbands effect the female labor force participation positively and significantly, while women falling in the Age group (15-24 year), children in the age group (0-2) years and (3-6) years, presence of household's assets, spouse participation in economic activities reduce the female's work participation in economic activities.

The determinants and their impact on female labor force participation in Chile were explored by Contreras and plaza (2010). Data was obtained from International Social Survey Program (ISSP) survey which was conducted by Centro de Studios Publicos. This survey included individuals aged above 18 years from rural and urban Chile. It consisted of 653 women and 556 men who were surveyed in 144 Municipalities. The outcome of the study showed that women education had positive impact on women labor force participation, while numbers of children have negative impact on female labor force participation. This study also examined cultural values which was negatively affected the women participation in the labor market.

Hafeez and Ahmad (2002) discussed various demographic and socio economic factors effect female labor force participation. This research is based on the field survey conducted in the Mandi Bahaudin district. This study employed probit and logit model to analyze the effect of demographic and socio

economic factors on female labor force participation. This study found that FLFP is positively associated with females' level of education. However husband's education, number of workers other than husband and wife and ownership of assets are negatively correlated to FLFP. On the other hand FLFP is positively associated with age, household size and structure.

The role of conservatism in determining female labor force participation was discussed by Goksil (2013). This paper used data from Household Structural Survey (2006). This survey contains over a hundred questions regarding the perceptions, habits and household structure of Turkish families. The principle component analysis (PCA) is applied to shape three special indices and the answers of the husbands are for all time considered. The major index i.e. conservatism index is used throughout the paper, which consists of two sub-indices: the religion index and the social norms index. The results of this paper show that higher conservatism leads to lower FLFP.

Amin and Alam (2008) examined that whether religion was an important factor of single and married female's full-time and paid work occupation in Malaysia. To analyze the impact of religion on female employment, they apply a sequential logit approach and used Malaysian Family Life Survey (MFLS). The results of this study indicated that religion was more influential in rural areas than urban areas.

Varol (2017) investigated the important determinants of women's labor force participation (WLFP) in Turkey. He used World Values Survey and applied binary logit model. He concluded that WLFP effect positively with increased level of education, high level of income, and being head of household. While women's age had a positive effect up to the age of mid-30s, after that its effect was negative. Whereas WLFP effect negatively by Marriage and the growing number of children

Karamollaoglu and Soybilgen (2020) examined factors of female employment in manufacturing firms. By using different sources he constructed micro data set. He concluded that female employment rate was higher in bigger firms, exporter firms, higher part-time worker firms, and firms owned by foreigners. Whereas firms with high labor efficiency, firms with lengthy working hours and younger firms have lesser employment rate of women.

Tasseven (2017) examined the important factors of female labor force participation (FLFP). He analyzed the impact of unemployment rate, per capita gross domestic product (GDP), and ratio of female to male primary enrollment, ratio of female to male secondary enrollment, ratio of female to male tertiary enrollment, fertility rate and life expectancy of females at birth. This study used the data between 1995 and 2013 of G8 countries taken from World Bank

database. The outcome of this study showed that unemployment had a negative effect on FLFP. The GDP and education had positive effect on FLFP.

Khadim and Akram (2013) studied the female labor force participation in formal sector in Pakistan. The data was taken from Pakistan Social and Living Standard Measurement (PSLM) 2007-08, about the household and individual characteristics of females' age from 21 to 60 were used for analysis. Binary logistic regression was used to calculate the factors influencing the FLFP in formal sector. The results showed that higher education or professional degree plays a significant and positive role in female labor force participation. Furthermore FLFP increases in formal sector if they were married belong to joint family system with many sisters and living in urban area. While, female as a head of household, presence of boys and age of female decreases the possibility of women participation in labor force in formal sector.

How an epidemic affected the labor force participation rate of the country was examined by Yu et al. (2020). He concluded that the occurrence of an epidemic change human behavior and negatively affects the labor force participation rate. The inverse relationship may be due to cultural behaviors to uncertainty evasion. Labor force participation rate declined in those countries where uncertainty avoidance index was higher. In low- and middle-income countries the negative effect was more prominent among younger and male workers.

Liu (2012) investigated the association between employment and the labor market changes in urban China during 1980s.Persistent GDP growth in China had inconsistently been accompanied by decreasing labor force participation rate as well as increasing unemployment rates. He utilized the national representative micro dataset. To investigate the study objective, he used binary logistic regression. Results showed that age, education, communist-party membership and marital status were significantly associated with participation in the labor force and employment opportunities. The impacts of education and party membership have increased over time. An extension of the Blinder-Oaxaca decomposition finds little of the observed male-female differentials attributable to differences in characteristics such as age or education but to coefficient effects, a possible reflection of discrimination.

Liu et al. (2010) analyzed the effect of parental care on married women's labor supply in urban China. They were using the China Health and Nutrition Survey for the period 1993–2006. The results showed that Chinese women challenge competing demands for care, not only among younger parents but also between older parents and their own young children. Moreover, the outcomes unveil striking differences in labor market outcomes between caring for parents and caring for parents-in-law. Caring for parents did not affect the caregiver's

employment status and work hours. Whereas caring for parents-in-law had a statistically significant, sizable, negative effect on the caregiver's probability of employment and hours of paid work.

Aguero and Marks (2011) examined the association between children and female labor force participation. Infertility mimics an experiment where nature assigns an upper bound for family size, independent of a woman's background. This new factor endorsed us to examine the discrepancy of labor supply without restrictions on initial family size. They used the household datasets of Demographic and Health Surveys of 26 developing countries. They applied OLS estimation to investigate the study objectives. They found that the presence of children affects neither the likelihood of work nor its intensity, but impacts the type of work a woman pursues.

Johnson (2014) investigated the association between house prices and labor force participation in USA. He checked the correlation among variables. There was a positive correlation between house prices and married women's labor force participation across U.S. metro areas. Reasonable, informal point of view had been advanced to support the causality in either direction: prices raising participation (negative income effects of higher house prices lead more married women to work) or participation raising prices (richer two-earner households bid up the price of scarce housing). He build an equilibrium model of location, labor supply and real estate (land) prices within a metro area which predicts that (1) metro areas with exogenously less buildable land will have higher house prices and more labor force participation of married women, while (2) metro areas with married women exogenously more prone to work will have higher house prices. Using geographic instruments for housing supply, he find little evidence of a positive effect of house prices on married women's labor force participation, but a somewhat greater possibility that house prices raise their earnings. Similarly, an instrument for married women's labor supply reveals no consistent significant causal effect of two earner households on housing prices, while the possibility of a positive effect cannot be ruled out.

Ijaz (2011) examined the important factors of FLFP across rural and urban Pakistan. It gives evidence supporting numerous characteristics of the female labor supply. She used the cross sectional data on females between the ages of 15 and 50 drawn from household data collected as part of the Pakistan Social and Living Standards Measurement Survey for 2006/07. For investigating the study objectives, she was used probit model. She was used the instrumental variable (IV) approach to tackle the problem of endogeneity. In the first stage, the study's results provided estimates of endogenous covariates separately, using the IV approach. In the second stage, the IV vector was used to show the impact of independent variables on the dependent variable FLFP. They found an inverse and significant relationship between FLFP and both fertility

and the gender-wage gap; and a direct and significant association between FLFP and ownership of home appliances and co-residence.

Dildar (2015) investigated the role of social conservatism as a constraint for women's labor force participation. He used 2008 Demographic and Health Survey data. He incorporated cultural constraints in analyzing labor supply model, specifically the sexual division of labor in the household and broader gender ideology into the analysis. He found that both patriarchal norms and religiosity were negatively linked with female labor force participation. The impact of patriarchal norms was statistically significant after controlling for endogeneity.

Assaad et al., (2018) tested the FLFP among educated women in four MENA countries – Algeria, Egypt, Jordan and Tunisia. These countries were constrained by opposing developments in the structure of employment chances on the demand side. He claim that the contraction in public sector employment chances had not been made up by a proportionate increase in opportunities in the formal private sector, leading to increases in female unemployment or declined in participation. He used multinomial logit models estimated on annual labor force survey data by country to mimic trends in female participation in different labor market states (public sector, private wage work, non-wage work, unemployment and non-participation) for married and unmarried women of a given educational and age profile. Outcomes confirmed that the decline in the likelihood of public sector employment for women with higher education was associated with either an increase in unemployment or a decline in participation.

Determinants that effected the female labor force participation in rural and urban areas of China were explored by Chen et al. (2014). Data was collected from China Health and Nutrition Survey 2006. Probit logistic regression was used to analyze the factors associated with female labor force participation. The result indicated that individual factors were more important for women belonging to urban areas, while family factors play a significant role for women living in rural areas. This structural difference should be kept in mind while designing policies.

Saure and Zoabi (2014) claims that expansion in trade in those sectors intensive in female labor, the gap in gender wage increases and female labor force participation decreases. We use data during the period 1990 to 2007 of US-Mexican trade. OLS were applies for analysis. Our regression results support our hypothesis that in rich economies trade with poor economies tends to decrease female labor supply.

Faridi and Rashid (2014) described the factors that affect the educated women participation in the labor force. Primary data was collected from Multan

District, Punjab, Pakistan. Logit and Probit models were used to analyze the data. They found that educational level had positive and significant impact on female labor force participation. The coefficients of age groups 25 to 29 and 30 to 34, husband's education, their income, marital status, family structure, and family expenditures have a positive and significant impact on FLFP, while the coefficients of the father's education, location, distance, husband's employment status and income, family expenditures, and ownership of assets significantly reduce FLFP.

Awan et al. (2015) described the determinants of rural women labor supply in agricultural sector in district Rajanpur, Pakistan. Data collected from 6 union councils (UCs) out of 44 UCs, out of each UC two villages and 25 women in each UC above 18 years of age have been randomly selected. OLS have been used to analyze the data. Women age, family structure, family size, husband's health status, purdah observed, source of income and number of children are statistically significant.

Hare (2016) explained the reason behind the decrease in labor force participation of married women in China. Data was taken from China Health and Nutrition Survey and Longitudinal Survey on rural urban migration in China from 1991 to 2011. Fixed effect regression was used to analyze the impact of socio-economic determinants of labor force participation. Results showed that education had positive impact on women employment level. Child care responsibility had negative effect on women labor force participation and vice versa. Similarly, more duty time and low wage had negative effect on FLFP.

Klasen (2019) found that the determinants and levels of FLFP in developing countries. He said that increase in female education and better economic conditions should be promoted in developing countries which lead to decrease in rapid fertility rate. He observed that the trend of FLFP was heterogeneous like in developing countries (Middle East and South Asia); this trend was decreasing .On the other hand this trend was increasing in developing countries like Latin America. "Feminization U Hypothesis" was the main reason of inconsistency of those trends, as well as economic structure, structural changes, initial conditions of development and gender norms effect FLFP. Results found that level of FLFP was heavily affected by economic structure and women economic opportunity. On the other hand trend of FLFP was affected by women employment household conditions, women education break down occupational barriers.

Deinger (2020) investigated the relationship between political empowered women and FLFP. He said that persistent decrease in income growth, women education, fertility rate and FLFP in rural India over the last

decade. In this paper the dataset of nationwide individual level were used to explore random affiliation with female village leadership affected their access to job opportunity, income as well as empowerment in household level. Results suggest that politically connected women are more empowered to participate in FLFP as well as intra household decisions.

In literature the relationship of different indicators such as women's age, women's education, region of residence, place of residence, wealth status of women's household, women's empowerment, gender of head of household, no. of living children, ownership of land and house, rate of inflation can be important factors of female labor force participation. I have hardly seen any study in which researchers have investigated the moderating role of husband's education on FLFP. This study has investigated the moderating role of husband's education on FLFP particularly in the case of Pakistan.

2.2 THEORETICAL FRAMEWORK

Role of females in the labor market were introduced by Mincer (1962), Becker (1965), and Cain and Dooley (1976), in their pioneering contributions. They raised the interest of many researchers who further analyzed female labor supply using different explanatory variables and econometric techniques; they applied cross-sectional, time-series, and panel data, resulting in a vast body of literature on the subject.

Mincer (1962) attempted to interpret the static analysis of labor supply to include lifetime variables, and found that family income had no effect on a wife's demand for leisure. His results also indicated that the number of children has a significant effect on females' lifetime labor supply curve. He concluded that the probability of labor force participation was inversely related to lifetime wealth measures.

Becker (1965) generalized the role of time in economic activities so that time became a central element in decisions affecting fertility, health, and location, etc. Becker's theory on the allocation of time laid a foundation for the household production model. Since then, there have been several substantive methodological advancements. The simple model of labor supply choice has been extended in a number of dimensions, which include issues related to family, the abilities of husband and wife, decisions regarding human capital accumulation, the consumption of market goods, and leisure.

Gronau (1973) and Heckman (1974) focused on the appropriate method of estimation. Gronau (1973) found that education played an important role in determining the market wage, but concluded that the rate of return on education

was underestimated due to a negative correlation between education and true residuals in the wage equation. Heckman (1974) made an important methodological contribution to labor supply estimation by introducing a simultaneous estimation for market wage and shadow wage (the marginal value placed on a female's leisure) functions. Heckman's approach allows one to estimate a common set of parameters that underlie the function determining the probability of a female working, her hours of work, her observed wage rate, and shadow wage. Heckman's results indicated that the estimated effect of having one child aged below six was to raise the asking wage by 15 percent. Increases in net assets and a female's education had a positive effect on the asking wage.

Women with a higher level of education are more likely to participate in labor market. Higher levels of women's education increase the opportunity cost of producing nonmarket output as well as the probability of participating in income-generating activities outside the home. Women living in joint families, women with fewer assets, and women whose husbands earn low incomes are positively associated with FLFP. While those women whose husbands or parents are at least secondary educated are less likely to participate in the labor market. In rural household husbands are more reluctant to allow their wives to work, this is presumably because household income rises in tandem with the husband's level of education with a corresponding decrease in the participation rate of educated women. Women's participation in the labor force decreases with their spouses' level of education. In comparison urban educated husbands allow their wives to work; this is because of fewer social constraints and women's desire to provide their children for better living standards (Ahmad and Hafeez, 2007).

We have hardly seen any study in which researchers investigate the moderating role of husband's education on FLFP but some researchers were used moderation term in different aspect like job satisfaction (Nawaz and Abid, 2019), job performance and subject wellbeing (Butt et al., 2020) and turnover intention (Zafar et al., 2021). In this study, it has been investigated the moderating role of husband's education on FLFP particularly in the case of Pakistan.

CHAPTER 3

METHODOLOGY

3.1 METHODOLOGY

This study has focused on the impact of a supportive role of husband's education on an educated women's labor force participation. It has also investigated the relationship of women's age, their education, and ownership of land/house, wealth status of household, gender of household headship, number of living children, husband's education, and husband's employment status, place of residence and region of residence with FLFP. This section of the study will discuss the model of the study, specification of the variables, estimation technique and data sources.

This study has used binary logistic regression and moderation technique to check whether that third variable influences the strength or direction of the relationship between an independent and dependent variable. Like other independent variables, it may be categorized or continuous. Moderator plays three important roles. First, moderator may strengthen or weaken the relationship of dependent and independent variables. Second moderator can change the relationship between dependent and independent variables. Lastly moderator may change the insignificant role into significant between dependent and independent variables (Hayes, 2012).

3.2 MODEL

The functional form of model is as given below.

*FLFP = f (WA, WED, OLH, WSH, GHH, NLC, HED, HES, PR, RR, WED * HED, HED * PR)*

where

FLFP =	Female labor force participation
WA =	Women's age
WED =	Women's education
HED =	Husband's education
HES =	Husband's employment status
NLC =	Number of living children of women
WSH =	Wealth Status of women's household
RR =	Region of residence
PR =	Place of residence
GHH =	Gender of head of household
OLH =	Ownership of land/house
WED*HED=	The interaction between women's education and husband's education
PR*HED =	The interaction term between place of residence and husband's education

3.2.1 Specification of Variable

The brief specification of variables is given as.

3.2.1.1 Female Labor Force Participation (FLFP)

Female labor force participation (FLFP) is dependent variable in our analysis. This variable has been constructed by extracting the information from PDHS. According to PDHS 2017-18, those women who have done any kind of work in the last seven days considered as currently employed. It has been categorized into two categories i.e. women currently employed and currently

unemployed. If women are currently employed, coded as 1, and if women are currently unemployed then coded as 0.

3.2.1.2 Women's Age (WA)

We have used women's age as an independent variable in our model. Women's age has been classified into different five years age groups. This variable has been constructed by extracting the information from PDHS. These groups are coded into 7 categories: women's age group of 15-19 is coded as 1, women's age group of 20-24 is coded as 2, women's age group of 25-29 is coded as 3, women's age group of 30-34 is coded as 4, women's age group of 35-39 is coded as 5, women's age group of 40-44 is coded as 6 and women's age lies between 45-49 then coded as 7.

3.2.1.3 Women's Education (WED)

Women education level is divided into four categories i.e. no education, primary education, secondary education, higher education in the dataset of PDHS. In our study women's education is divided into two categories. Because we have applied moderation analysis in our study, the assumption of moderation analysis is the moderator and independent variable must be binary. If the women have no education and has attended primary school only, this is considered as less than secondary education coded as 0 and if the women have completed secondary school education and have completed higher education then this is considered as at least secondary education than coded as 1.

3.2.1.4 Husband's Education (HED)

Husband's education level is classified into 4 categories i.e. no education, primary, secondary and higher education in the dataset of PDHS. In our study husband's education is divided into two categories. Because we have applied moderation analysis in our study, the assumption of moderation analysis is the moderator and independent variable must be binary. If the husbands have no education and has attended primary school only, this is considered as less than secondary education coded as 0 and if the husband have completed secondary school education and have completed higher education then this is considered as at least secondary education than coded as 1.

3.2.1.5 Husband's Employment Status (HES)

Husband's employment status has been categorized into two categories i.e. currently employed coded as 1 and currently unemployed coded as 0.

3.2.1.6 Number of Living Children of Women (NLC)

If women have less than five children then coded as 0, if women have at least five children then coded as 1. The reason behind the selection of this category is that the average number of children as per data taken from PDHS is 4.74 which is closer to 5.

3.2.1.7 Wealth Status of Household (WSH)

Wealth status of household has been used as an independent variable in our study. The wealth status was constructed using the information of household asset and residence characteristics. Every household was given a score for all assets and summation of the score was taken for every household. Each person was ranked as per scores of the households in which they resided. Wealth status was divided into quintiles from Poorest to Richest (PDHS, 2013). On the basis of their wealth scores, households have been placed in five different quintiles, i.e. poorest, poorer, middle, richer and richest quintiles. In this study if women belonged to first three quintiles (poorest, poorer and middle) considered as poorest then coded as 0 and if women belonged to last two quintiles(richer and richest) are considered as richest then coded as 1.

3.2.1.8 Region of Residence (RR)

Region of residence is another independent variable of our study. This variable has been classified into seven categories. If women belongs to Punjab province then coded as 1, If women belongs to Sindh province then coded as 2, If women belongs to KPK province then coded as 3, If women belongs to Balochistan province then coded as 4, If women belongs to GB region then coded as 5, If women belongs to AJK region then coded as 6, If women belongs to ICT region then coded as 7.

3.2.1.9 Place of Residence (PR)

Region of residence is another independent variable of our study. This variable has been classified into two categories i.e. urban coded as 0 and rural coded as 1.

3.2.1.10 Gender of Household Head (GHH)

Gender of their household head is classified into 2 categories. If the household head is male then coded as 0, if female then coded as 1.

3.2.1.11 Owner of Land/House (OLH)

Women ownership of land or house is divided into 2 categories. If women don't have own land or house then coded as 0 and if they have own land or house then coded as 1.

3.2.1.12 Women's Education * Husband's Education

This variable is the interaction between women's education and husband's education.

3.2.1.13 Place of Residence * Husband's Education

This variable is the interaction between place of residence and husband's education.

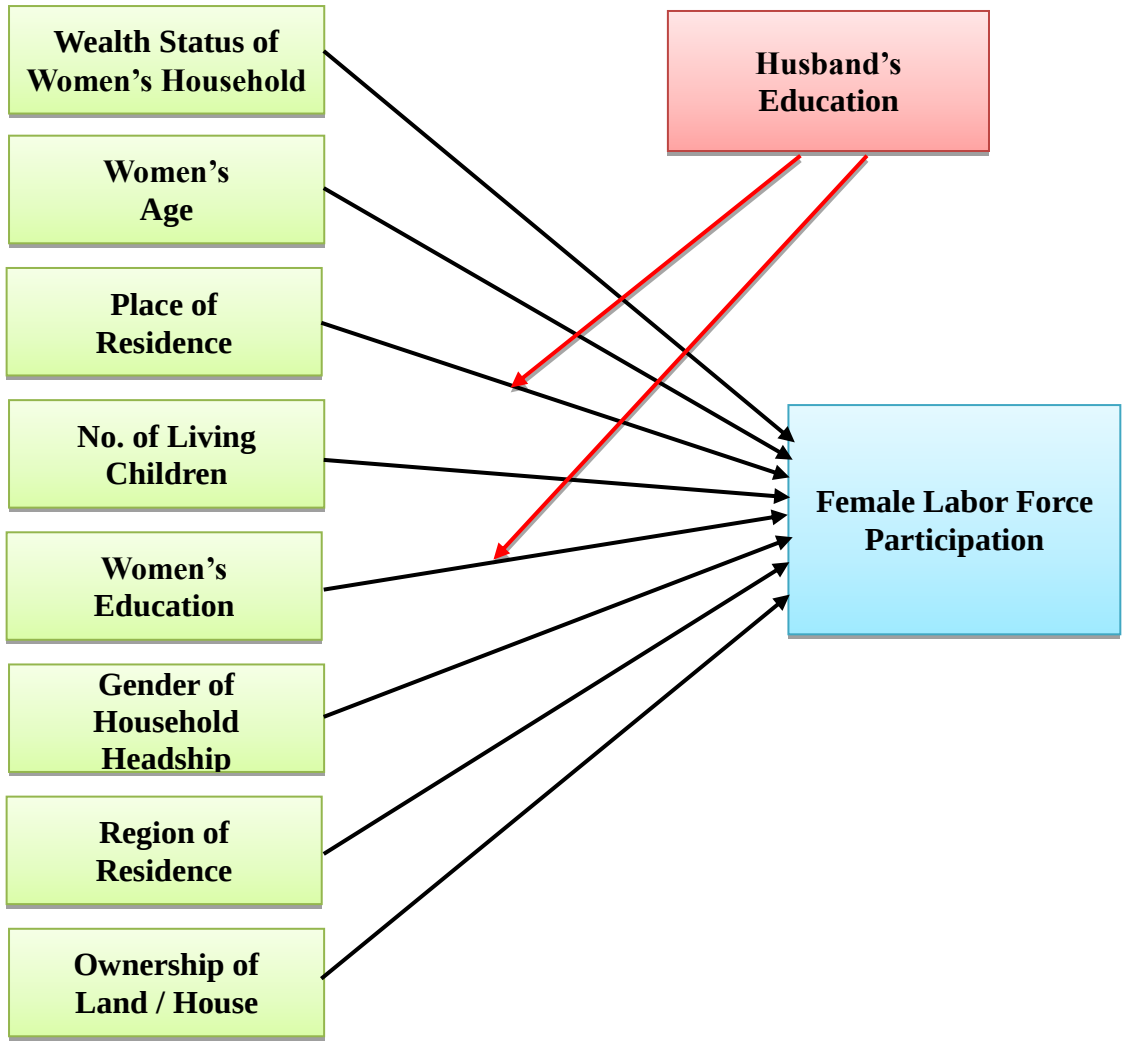

Figure 3.1: Conceptual Framework of the Study

3.3 ESTIMATION TECHNIQUE

The binary logistic regression technique is used to analyze the impact of independent variables on dependent variable. In this study the dependent variable is categorical in nature. In this context, logistic regression seems appropriate for analysis. In binary logistic regression, the dependent variable consists of two possible outcomes i.e. respondents are currently employed and respondents are currently unemployed. Odds ratio have been used to explain the nature of relationship of dependent variables with independent variables (Gujarati, 2009).

Moderation technique is also used to quantify the joint effect of two independent variables. It helps to check the strength and weakness as well as the significance of the relationship between dependent and independent variables. Moderator plays three important roles. First, moderator may strengthen or weaken the relationship of dependent and independent variables.

Second moderator can change the relationship between dependent and independent variables. Lastly moderator may change the insignificant role into significant between dependent and independent variables (Hayes, 2012).

Econometric model of this study is given below.

$$FLFP = ln\left(\frac{p}{1-p}\right) = \delta_0 + \delta_1 (WA) + \delta_2 (WED) + \delta_3 (OLH) + \delta_4 (WSH) + \delta_5 (GHH) + \delta_6 (NLC) + \delta_7 (HED) + \delta_8 (HES) + \delta_9 (PR) + \delta_{10} (RR) + \delta_{11} (WED * HED) + \delta_{12} (PR * HED) \quad (1)$$

Log (odds) = logit(p) = $\ln\left(\frac{p}{1-p}\right)$

here *p* is the probability of presence of the characteristic of interest. The logit transformation is defined as the logged odds:

$$odds = \frac{p}{1-p} = \frac{probability\ of\ presence\ of\ characteristic}{probability\ of\ absence\ of\ characteristic}$$

and

$$logit(p) = \ln\left(\frac{p}{1-p}\right)$$

3.4 DATA SOURCE

The data is collected from Pakistan Demographic and Health Survey 2017-18, which was conducted by National Institute of Population Studies. The Pakistan Bureau of Statistics (PBS) provided the household lists for sampled zones in the country. The sample size based on 16240 household was assessed to provide sensible accuracy for the survey indicators and involved two stage sampling. At the first stage of sampling, 580 primary sample units (285 in urban areas and 295 in rural areas) were selected using systematic sampling technique, and in the 2nd stage of sampling, a static number of 28 households were arbitrary selected in all cluster by an equal probability systematic sampling procedure. Total 16240 household were selected in all regions, out of which 7980 household were in urban areas and 8260 in rural areas. A total of 50450 women aged 15-49 were interviewed for this survey (PDHS, 2018). After removing the missing data, information on 48,497 women were analyzed.

CHAPTER 4

RESULTS AND CONCLUSION

The results and conclusion drawn from these findings along with data description are discussed in this chapter. The variables such as women's age, women's education, region of residence, their place of residence, number of living children, wealth status of women's household, gender of household headship, husband's education, Husband's employment status, ownership of land / house are used to analyze their impact on FLFP in Pakistan.

4.1 STATISTICAL DATA DISCRIPTION

The table 4.1 given below illustrates the statistical data description of the socioeconomic characteristics of the women extracted from the Pakistan Demographic and Health Survey 2017-18.

Table 4.1
Statistical Description of Socio-Economic Characteristics of Married Women

Characteristics of women (Total Women= 48497)		**Frequency**	**Percentage**
Women's Age	15-19	390	0.8
	20-24	2,932	6.0
	25-29	7,331	15.1
	30-34	9,739	20.1
	35-39	11,468	23.6
	40-44	8,692	17.9
	45-49	7,945	16.4
Women's Education	Less than secondary	35,961	74.2
	At least secondary	12,536	25.8
Ownership of Land / Household	No ownership	46,689	96.3
	Ownership	1,808	3.7
Wealth Status of Household	Poorest	32,131	66.3
	Richest	16,366	33.7
Gender of Household Headship	Female	4,505	9.3
	Male	43,992	90.7
Number of Living Children	Less than five	24,350	50.2
	At least five	24,147	49.8
Husband's	Less than secondary	16,000	33.0

Characteristics of women (Total Women= 48497)		Frequency	Percentage
Education	At least secondary	32,497	67.0
Husband's Employment Status	Currently unemployed	2,837	5.8
	Currently employed	45,660	94.2
Place of Residence	Rural	26,400	54.4
	Urban	22,097	45.6
Region of Residence	Punjab	10,227	21.1
	Sindh	8,659	17.9
	KPK	7,969	16.4
	Baluchistan	6,188	12.8
	GB	3,628	7.5
	AJK	5,092	10.5
	FATA	3,685	7.6
	ICT	3,049	6.3
Women's employment Status	Currently unemployed	41,645	85.9
	Currently employed	6,852	14.1

Source: Pakistan Demographic and Health Survey 2017-18

The socio-economic and demographic characteristics of the women are presented in Table 4.2. The data is comprised on 48,497 females. Majority of these women are aged between 35 and 39 years, and in total more than half of the women are of 35 years and above. Two-third of all women has less then secondary education (74.2%); in contrast, two-third of all husbands (67%) has received at least secondary education. Almost two-third (66.3%) female reside in poorest household and similarly 96.3% of the women has no ownership of land/house. Majority of the women (85.9%) are not currently employed; in contrast, 94.2% of the husbands are currently employed. The majority (90.7%) of the males was head of household and almost half of the households had less than five children. Out of total (48,497) women, 26,400 (54.4%) belong to rural area and 22,097(45.6%) belong to urban area. Among 21.1% women reside in Punjab region, 17.9% in Sindh region, 16.4% in KPK region, 12.8% in Baluchistan region, 7.6% in FATA region, 10.5% in AJK, 7.5% in GB and 6.3% in ICT.

4.2 IMPACT OF SOCIO-ECONOMIC VARIABLES ON FLFP

This study has investigated the relationship of women's age, women's education, region of residence, their place of residence, number of living children, wealth status of women's household, husband's education, husband's

employment status and ownership of land/house with FLFP. The findings are presented in Table 4.2.

Table 4.2
Results of Binary Logistics Regression

Dependent Variable: Female Labor Force Participation				
Independent Variables		**B**	**Sig.**	**Exp (β)**
Women's age	15-19	**Reference**		
	20-24	.168	.434	1.183
	25-29	.533	.010	1.704
	30-34	.757	.000	2.131
	35-39	1.145	.000	3.141
	40-44	.933	.000	2.541
	45-49	.931	.000	2.527
Women's Education	Less than secondary	**Reference**		
	At least secondary	.351	.000	1.421
Ownership of land/household	No ownership	**Reference**		
	Ownership	.337	.000	1.400
Wealth status of household	Poorest	**Reference**		
	Richest	-.626	.000	.535
Gender of Household Headship	Male	**Reference**		
	Female	.193	.000	1.212
Number of living Children of Women	Less than five	**Reference**		
	At least five	-.199	.000	.820
Husband's education	Less than secondary	**Reference**		
	At least secondary	-.323	.000	.724
Husband's Employment Status	Currently unemployed	**Reference**		
	Currently employed	-.336	.000	.715
Place of Residence	Urban	**Reference**		
	Rural	.041	.179	1.042
Region of Residence	ICT	**Reference**		
	Punjab	.104	.058	1.110
	Sindh	.021	.711	1.021
	KPK	-1.173	.000	.310
	Baluchistan	-.845	.000	.429
	GB	-1.496	.000	.224
	AJK	-.747	.000	.474
	FATA	-2.682	.000	.068
Women's education *Husband's education		.3217	.004	1.361
Place of residence *Husband's education		-.1204	.027	.329
Constant		-1.683	.000	.186

The results after applying binary logistic regression are stated in Table 4.2. It shows the impact of women's age, women's education, region of residence, their place of residence, number of living children, wealth status of women's household, gender of household head, husband's education, husband's employment status and ownership of land/house on FLFP.

4.3 CONCLUSION

Detailed discussion and results drawn about the impact of each socioeconomic factor on FLFP is narrated below.

- **Women's Age:** As per findings, age of women has a positive and significant role on FLFP. It implies that when age of women increases; female labor force participation also increases**.** Women at the age group (15-19) are less likely to participate in the labor force compared to that in age group (20-24) and above. At the age of early 20's (20-24), the role of women's age is though positive but insignificant. It becomes significant and keeps on increasing and recorded maximum at the age of 39 (35-39). It remains positive and significant till the age of 49.

The insignificant role in early 20s of female may be due to the more engagement of females in their studies, changing marital status, caring and rearing of children. Females may also not take work/labor seriously as a profession at the early 20's. This may be justified on social constraints, professional learning, and may be due to lack of skills, training and experience. At the age from (30-35) females may be socially and professionally settled, so the role of age is maximum. Its role is continuously positive and significant on FLFP till the age group (35-39).

- **Women's Education:** The results of this study show that the relationship between FLFP and higher levels of education is positive and significant: the higher the level of education, the higher is the likelihood of FLFP. Higher levels of education enhance women's job opportunities outside the home and their capacity to generate an income. These results reflect Becker's (1965) theory of household production and time allocation. Higher levels of education increase the opportunity cost of producing nonmarket output as well as the probability of participating in income-generating activities outside the home. This study is in line with the findings of Ahmad and Hafeez (2007) and Kozel and Alderman (1990).

- **Husband's Education:** The existing literature about role of husband's education on FLFP is quite controversial. Hafeez and Ahmad (2002) have concluded in their study that husband's education has played negative and significant role. While Faridi et al., (2009) and Faridi and Rashid (2014)'s findings are quite opposite and they concluded that the role of husband education has a positive and significant impact on FLFP. The findings of this study go in line with the conclusion of Hafeez and Ahmad (2002).

- **Husband's Employment Status:** As per findings, those women whose husbands are employed are less likely to participate in labor force as compared to those whose husbands are unemployed. The coefficient of the employment status of the husband is negative and significant. An increase in the husband's income will likely to reduce the need for his wife to participate in the labor force. Ahmad and Hafeez (2007) concluded in his study that Husband's income has an inverse relationship with FLFP.

- **Number of Living Children of Women:** Those women who have at least five children are less likely to participate in labor force as compared to those who have less than five children. One of the reasons is may be that as the number of children increases they have to spend more time to take care their children in addition to other household works. Faridi and Rashid (2014) also concluded in his study that increases in the number of children decreases the FLFP.

- **Wealth Status of Household:** Those women who belong to richest households are less likely to participate in labor force as compared to those women who reside in poorest household because an increase in households wealth decreases females chance to do market work. This study is in line with the findings of Riaz and Pervaiz (2018).

- **Region of Residence:** Region of residence is also an important factor affecting FLFP. The results of this study show that region of residence have significant impact on females' labor force participation. Those women who belong to Punjab region are more likely to engage in labor force than ICT and all other region. Punjab is one of the most developed and urbanized region of the country. But all other region women are less likely to participate

in labor force than ICT women. Similar findings are presented by Riaz and Pervaiz (2018).

- **Place of Residence:** The findings of this study indicate that those women who reside in rural areas are more probable to participate in labor force as compared to those who belong to urban areas. This relationship is statistically insignificant.

- **Gender of Household Head:** Those women who are head of household are more likely to participate in labor force as compared to those where male are head of household. Riaz and Pervaiz, (2018) have also concluded that those women who are head of household, are more empowered to take decisions regarding employment, their health and family planning (Riaz and Pervaiz, 2018).

- **Ownership of Land/House:** Those women who have ownership of land/house are more likely to participate in labor force then those women who have not ownership of any land/house. Ownership of assets increases household wealth and financial stability, making it more likely for women to seek employment. Ahmad and Hafeez (2007), Riaz and Pervaiz (2018) and Faridi, Sharif et al. (2009) put forward similar findings.

4.3.1 Moderating Role of Husband's Education on FLFP

In this study, we have investigated the moderating role of husband's education on the relationship between women's education and FLFP as well as the moderating effect of husband's education on the relationship between place of residence and FLFP.

4.3.1.1 Women's Education *Husband's Education

The results in Table 4.4 show that the moderating role of husband's education on the relationship between women's education and FLFP is more distinct and positive when the husband's education is higher rather than lower education (**See Figure 4.1**). P-value indicates that null hypothesis of our study reject and accept alternative hypothesis. Moderating role of husband's education has positive and significant impact on females' decision to work in labor market. It is possible that females work with husband to share family financial burden. Many people earn low income and it is difficult for them to

meet all family expenses alone which in turn increase females' probability to do market work. Education of husband has negative significant impact on females' probability to go for market work. If husband is more educated, he can earn good by getting handsome salary from job which in turn decreases the chances of females' labor force participation.

Table 4.3
FLFP of Moderation/ Interaction

Variables	B	Sig.
Women's Education	.4449	.0652
Husband's Education	-.2087	.0000
Women's education * Husband's Education	.3493	.0014
Place of Residence	.1659	.1530
Place of residence * Husband's Education	-.1268	.0248

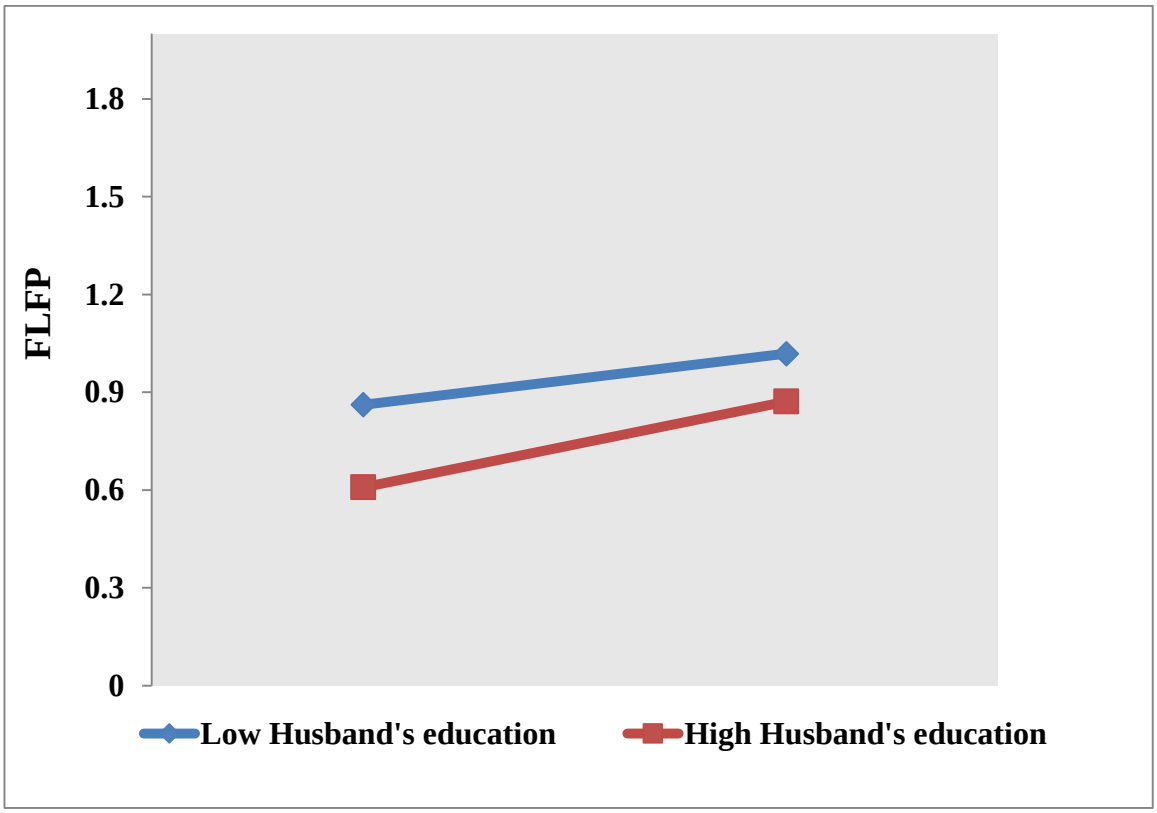

Figure 4.1: Graphical Representation of Moderation Analysis

4.3.1.2 Place of Residence *Husband's Education

Moderating role of husband's education on the relationship between place of residence and FLFP is more distinct and negative when the husband's education is higher rather than lower education (**See Figure 4.2**).

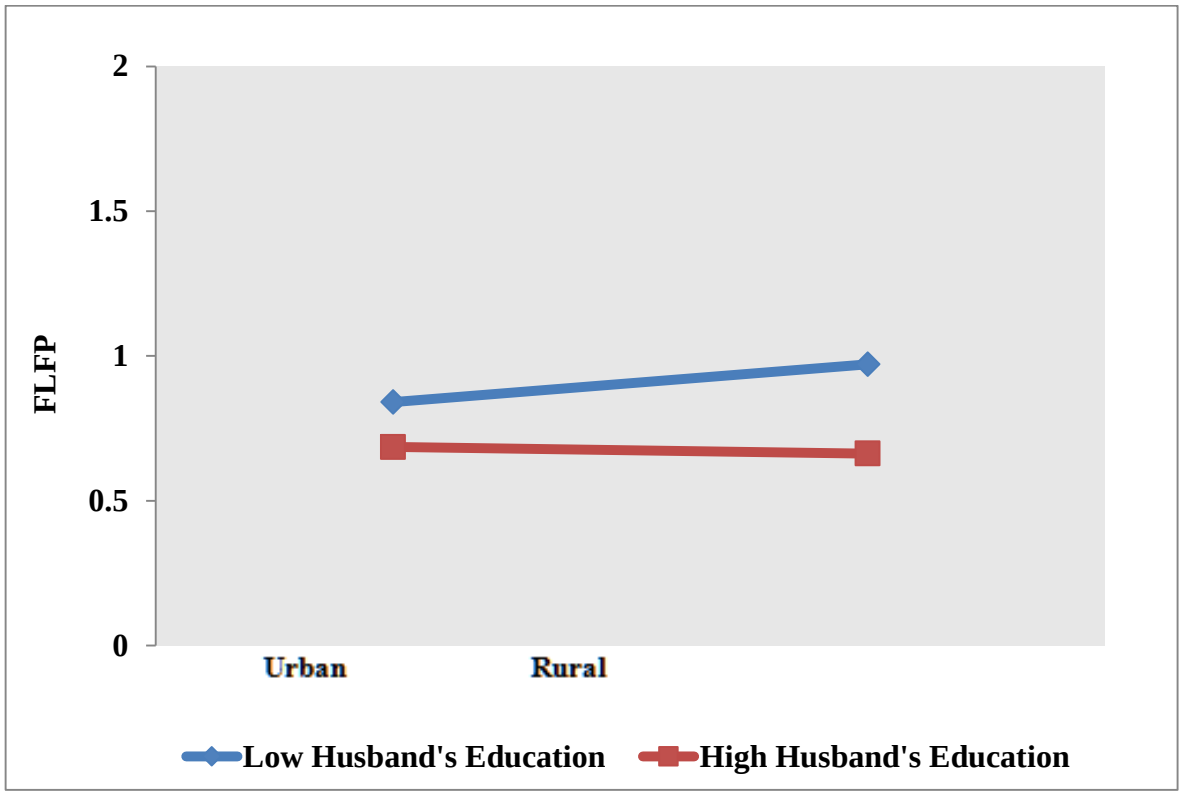

Figure 4.2: Graphical Representation of Moderation Analysis

Those women who belong to rural area and her husband are less educated are more participated in the labor market than those women who belong to urban area and her husband are higher educated. Because rural incomes are generally lower than urban incomes. It is possible that females work with husband to share family financial burden. Many people earn low income and it is difficult for them to meet all family expenses alone which in turn increase females' probability to do market work. P-value indicates that null hypothesis of our study reject and accept alternative hypothesis.

CHAPTER 5

CONCLUSION AND POLICY RECOMMENDATION

5.1 CONCLUSION

The results show that the moderating role of husband's education on the relationship between women's education and FLFP is more distinct and positive when the husband's education is higher rather than lower education. Moderating role of husband's education on the relationship between place of residence and FLFP is more distinct and negative when the husband's education is higher rather than lower education. The finding of the study shows that the likelihood of female labor force participation (FLFP) is higher as compare to those women who belongs to age group 15-19. This relationship is non-linear, firstly FLFP is higher till the age group 35-39 after that, this trend decreases in the age group 40-44 and then slightly increases the last age group. The odds of FLFP are higher among those women who are at least secondary educated than those women who are less than secondary education. The likelihood of FLFP is higher among those women who have ownership of land/house as compared to those women who have no ownership of land/house.

The result indicates that women with the richest household status are less likely to participate in labor market as compared to women with poorest household status. Those women who are head of household are more likely to participate in labor market than those household with male head. The probability of FLFP is less among those women who have at least five children than those who have less than five children. The odds of FLFP are less among those women whose husband is at least secondary educated. Similarly, the probability of FLFP is less among women whose husband is employed than those whose husbands are currently unemployed. Rural women are more likely to participate in the labor market as compared to urban women. The likelihood of FLFP is higher among those women who reside in rural area as compared to those who belong to urban area. The odds of FLFP are higher among those women who belong to Punjab and Sindh region than those who belongs to ICT. In contrast, the likelihood of FLFP is lower among women who belong to KPK, Baluchistan, GB, AJK and FATA region as compared to ICT.

5.2 POLICY RECOMMENDATION

The findings of this study reveal that the FLFP is boosted by Women's education. It is therefore recommended that better opportunities and quality education should be provided to females, particularly in rural areas.

According to the findings of this study husbands' education plays a significant role in FLFP. It shows that along with female education, male education is equally important, so comprehensive education planning is needed to improve FLFP.

As per the findings of this study, FLFP reduces with the increase in the size of the family through the number of children. A female's responsibilities of carrying and raising a child may limit the time available for employment. Consequently, employed women are anticipated to be more worried about their family size.

It is therefore recommended to bring awareness about family planning through a comprehensive media campaign. It may help to raise public knowledge to reduce the number of children.

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