IMPACT OF CULTURE ON FEMALE LABOR PARTICIPATION: ROLE OF RELIGION & RELIGIOSITY

Submitted by

Fatima Subhani
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Supervised by

Dr. Abdul Jalil
Professor

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CERTIFICATE

This is to certify that this thesis entitled: **"Impact of Culture on Female Labor Participation: Role of Religion & Religiosity"** submitted by Ms. Fatima Subhani is accepted in its present form by the Department of Economics, Pakistan Institute of Development Economics (PIDE), Islamabad as satisfying the requirements for partial fulfillment of the degree of **Master of Philosophy in Economics**.

External Examiner:

Dr. Muhammad Idrees
Associate Professor
Quaid-i-Azam University
Islamabad

Supervisor:

Dr. Abdul Jalil
Professor
PIDE, Islamabad

Head, Department of Economics:

Dr. Attiya Y. Javid
Professor/Head
Department of Economics
PIDE, Islamabad

Dedicated to

My Beloved Father

Fazal-E-Subhani

My Courageous Mother

Nasira Subhani

&

Muhammad Ibrahim

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ABSTRACT

Gender discrimination in the form of less female labor participation is one of the major obstacles that hinder the economic growth. This gender discrimination in the form of less female labor participation is needed to be discussed and in this way importance of culture and self-expression values, religious affiliation and religiosity regarding religion can't be neglected. In this way, this study examines the impact of culture on participation of females in labor force while in the presence of religion and religiosity. This study also investigates the role of religion and religiosity. This study takes the data of most recent wave 2010-2014 of World Value Survey for 53 countries over the worldbased on the availability of data of all considerable variables like female labor force participation, culture & self-expression values, religion, religiosity, marital status, social class, age and education. Study constructs composite index for culture and religiosity by using Principal Component Analysis (PCA). Culture includes four indicators like as trust, control, tolerance & respect and obedience and similarly religiosity includes three indicators like as participation in religious activities, importance of religions and intensity of belief. Study estimates logit model due to dummy dependent variable (FLFP). This study finds positive impact of culture due to strong positive attitudes of an individual female. Religion also has positive impact on FLFP. Similarly religiosity also has positive impact on the decision of an individual female to join labor force. It is so because more religious woman more punctual regarding her job so, more female participation in labor force. This study indicates that culture, religion and religiosity has important role to the determination of female participation in labor force. Hence, female's strong positive attitude towards work may lead to increase the participation in labor market and it will play an important role to the economic development of these countries.

Chapter 1

INTRODUCTION

The world population was estimated to have reached 7.6 billion as of October 2017. Femalesrange from 15 to 59 year is the 61% of total world's population (UN World Population Prospects, 2017). Only 51.8% of total female population is contributing in labor force. What about the rest of female population, who can work but these are not participating in the wellbeing of an economy? Females are the important pillar of a society. They make the civilized society by providing their services at home and as well as in job market.It is hypothetically acknowledged that if female joins the labor market then it will enhance the productivity of labor force by using the factors of production (Evans & Kelley, 2008). So, their participation in labor force cannot be ignored at the cost of culture, religion, religiosity and many other norms and values.

But, the factors which restrict the females from entering into job market importantly in economic activities are extremely linked with conventional beliefs, norms and values. It causes the gender discrimination in the form of low female labor force participation across different countries (Adeyem &*e*t al., 2016).

As the time is passing, feminist views have had a deep influence in many fields as well as in Economics. According to Lourdes Benerıa (1995), the field of Economics has fairly discussed the females' issues, while not from a feminist point of view. Specifically, labor Economics has analyzed the problem of females' decision to join the labor force by using different models that use to take in the variables of human capital, restraints, and prices to get to know the idea of females' behavior and their preferences in labor market. Therefore, conventional economics has been unwilling to

acknowledge the worth and value of gender and its effect on capital formation (Contreras & Plaza, 2010).

Many societies have different economic outcomes. This can be proved from the different types of policies in a country regarding policies of redistribution and provision of social security to an individual. Similarly, there is huge gap among the aggregate economic outcomes of different countries such as saving rates, fertility rates or women's behavior regarding participation in labor force. Therefore, the inclusion of cultural factors is very necessary to analyze the women's behavior to join labor force because it leads to economic growth (Fernández, 2010).

One possible noteworthy pre-market aspect in empirical analysis is religious background of an individual. Wages of labor market might depend on religious upbringing in two different ways, but these both can occur at the same time. Firstly, upbringing of individual at home with a specific religious denomination may convey some specific norms and values that help to attainment of development of skills and human-capital that causes higher wages in the life of an individual. Secondly, the capital of religious values attained from consistent appearance at spiritual services in childhood may mold priorities, encouraging certain qualities, such as rule and regulations, determination, and obligations that enhance labor supply of adults (Cornwell &*e*t al., 2003).

Most probably, women labor force participation is much less than males in many countries. To some extent, this gap is deep-rooted in culture and social customs. Behavior of an individual female to participate in labor force is attracting more interest because of fear that ageing problem of population will show a downward trend on supply of labor force. And it will have negative and worse effect on material

standard of living and public finances. In this way, a rise in female labor force participation would be helpful to overcome this problem (Jaumotte, 2003).

Women participation in the labor force and services are mainly less than men and cannot be compared internationally, showing that demographic, societal, lawful, and cultural facts and figures and norms telling whether activities of women are considered as economic. In most of low-income countries, mostly women are providing their services on farms or in other family enterprises without return, and others use to work in or near their dwelling, combining both and family tasks during the day. Economies with high income, women have been progressively attaining higher education that has caused well salaried, longer term jobs rather than lesser expert, shorter term occupations. However, women have less approach to higher wages jobs as compared to men (World Bank, 2017).

Additionally, there is huge literature on the predictors of women's behavior to join the labor force. There is another important motivating field that need to be discussed is to check the association between religion's divergence, background, language, culture and female labor force participation. In this way, other than existing factors there are many factors like religion, culture, language and ethnicity which effect the female labor force participation (Koyuncu & Özen, 2017). Therefore, this study includes the culture to check its impact on female labor participation and it also examines the role of religion and religiosity.

Firstly, culture can be defined as the ideas, norms and values, and social behavior of a specific individual or a society (Cambridge Advanced Learner's Dictionary, 4th Edition). The culture will be captured by using four self-deterministic values and these are as: tolerance and respect, trusting, control and obedience (Williamson,

2011). We will use PCA to make a construct of culture in our analysis. Data of these indicators are collected from WVS. There are some countries, which have cultural beliefs that don't allow their women to get education and work in labor market. Such a culture bound the women to stay at home and to live at the risk of their guardian. These women have no decision power. In this way, their intellectual capabilities remained under cover and there is no improvement in their personalities. In this way, they can't participate in the wellbeing of a country but there are also some positive personal beliefs like as tolerance & respect, control over life and trust in people which promote the female participation in labor force. The problem of gender discrimination in the form of less participation of female in labor force is common in such countries.

Secondly, the acceptance and worship of a superhuman controlling power, especially a personal God or gods is known as Religion (Oxford Dictionary). Religion is also one of the most important factors to determine female participation in labor market. In our study, religion is a binary dummy variable and it shows the religious affiliation of each female respondent of WVS (Alam *e*t al., 2017). Some religions don't allow their participation in labor market. In this way, these countries face the problem of low FLFP. Women are considered as care taker of home and children. Their understanding is not more than a daughter, a wife and a mother. So, their mind set remains under developed and they are not prepared to participate in labor market. But there are some religions like protestant which promote the capitalism that results in more female participation in labor force (Weber, 1905).

Thirdly, Religiosity is also included along with religion to conduct this analysis. Religiosity is about religious orientations and participation of an individual. Religiosity is concerned with the attendance of religious service of an individual. In this study, we will check the role of religiosity for the female labor participation. To

construct the variable of religiosity study includes three indicators and these are as: importance of religion in life, participation in religious activities and intensity of belief (H'madoun, 2010). So, construct of religiosity will be made by using PCA and their data is collected from WVS. Religiosity is being added because some women who are more religious they may work more honestly or according to their respective religion. For example, if a female belongs to Protestant and she is more religious then she may use to more participate in labor force (Weber, 1905).

Fourthly, the dependent variable is the female labor force participation (FLFP) and it is dichotomous dummy variable, taking a value of one if the individual reported having paid employment, and zero otherwise (Alam *e*t al., 2017). In our study, to check the impact of culture and religious factors on FLFP, this variable is placed on dependent side.

Finally, some other important factors are included to check the impact of culture, religion and religiosity on women's behavior to join labor force. These factors are age, education, marital status and social class. Furthermore, control variables along with culture, religion and religiosity are added in our study. These are some important factors which effect the female labor participation, which cannot be ignored to analyze the role of culture, religion and religiosity on participation of female in labor force. These all variables are added based on previous literature and strong theories.

This study is designed to focus on the worth of cultural factors and religious factors to check the economic behavior of individual female whether she should participate in labor force or no. The importance of cultural factors can't be denied predicting the economic behavior of an individual female. Cultural constraints were perhaps more important than an individual's pursuit of personal interest (Mill, 1834). Similarly, to

model economic outcomes, one cannot exclude the role of individual choice. Which is the most difficult to predict in economic theories. It is generally accepted that culture plays a role in individual's behavior (Simon, 1955). So, cultural factors have significant impact on FLFP and this construct is made by using PCA. This study uses four indicators and these are as: tolerance and respect, trusting, control and obedience to make this construct. This study took the data of WVS for this construct.

In this way, religious factors are important to consider in our study to predict the economic behavior of individual female whether she should participate in labor force. Because religion played crucial role in formation of markets (Weber, 1905). So, it is necessary to include religious factors in our analysis to check the behavior of individual female for the participation in labor force. Religion and religiosity are being included as religious factors to capture the impact of culture on female labor participation.

The significance of the Control variables can't be ignored in this study. All control variables like age, education, marital status and social class are being included based on "Rational Choice Theory". This theory elaborates the individual behavior of participating in labor force according to wage. It is assumed that an individual use to participate more in labor force based on wages. They will participate more at the age, when they will have high wages. So, to capture this effect of wages, study has used these control variables like age, marital status, social class and education (H'madoun, 2000). So, these all are the base theories of our study.

This study uses logistic regression due to the dummy dependent variable, three focused and all control are being included in our model. PCA is used to make the construct of culture and religiosity. Study uses the data of WVS of the most recent

wave 2010-2014. Furthermore, this is a cross sectional study and it includes the 53 countries over the world, whom data is available for all the above mention variables. In this way, study will check the impact of patriarchal norms in the presence of religion and religiosity.

1.1 Statement of Problem

As gender discrimination in the form of low female labor participation in labor force is a big problem. This problem is being faced by many countries in many countries at different level. Then these economies lead to slow economic growth. So, this study is being conducted to check whether the culture (self-deterministic values) has any impact on female labor force participation. Then it will include religion and religiosity to analyze their role to check the behavior of individual female of decision to participate in labor force.

Women from restricted background can't take part in the wellbeing of an economy due to these factors like as lack of job opportunities, low education level, low social status, age, marital status, religiosity, religion and culture. Such women can't take part in the economy and in this way their skills can't be used for any productive purpose to boost up the growth. Their capabilities and skills would be uncovered. It seems like some treasure under the cover and is not being used for the welfare of a society. So, these causes the slow growth rate and lead to less development of an economy. In this way, an economy remains under developed.

Now, this study examines the impact of self-expression values, religion & religiosity on FLFP. Our focus will be specifically on the impact of self-deterministic valueson female labor participation and role of religion and religiosity. So, these hurdles can be eliminated by using appropriate measures, Therefore, female percentage of world's

population of 49.6%, who are not currently participating in economy, can participate in labor market and in this way, their skills and capabilities can be used for the productive purpose. In this way, there will be development of personalities of female and as well as their capabilities will be used by the country for its betterment. It will lead to economic growth.

1.2 Significance of Study

Female participation in labor market is very important for the economic growth of a country because half of world population consists of females. There are many studies conducted separately along with many control variables to check the impact of patriarchal norms, religion and religiosity on FLFP. But this study is being conducted to check which type of impact culture will have on female labor participation by including religion and religiosity separately and combining both variables with culture by including control variables like age, education, marital status and social class. Major contribution of this study is to show the impact of culture along with religion and religiosity to the FLFP by using the primary data. Study also uses index of culture and religiosity by using Principle Component Analysis (PCA). This study includes cross sectional analysis by using the data of recent wave of WVS 2010-2014 considering 53 countries all over the world, whose data is available in most recent wave for all variables.

1.3 Objectives of Study

The vital purpose of this study is to show the impact of culture by the inclusion of religion and religiosity on the labor force participation of female for a list of 53 countries by using logit model. We will use PCA to construct the index of culture and

religiosity variables in our study. This study includes the following objectives, which are as given below:

- Impact of self-expression values on female labor force participation.
- Impact of culture in the presence of religion on female labor force participation.
- Impact of culture in the presence of religiosity on female labor force participation.
- Impact of culture along with both religion and religiosity on female labor force participation.

1.4 Organization of the Study

The study plan is designed as Chapter 2 will go through the review of literature, Chapter 3 is consisted of theoretical framework of the study, Chapter 4 is about the data and methodology of this study, Chapter 5 discusses the empirical results of study, Chapter 6 consists of the conclusion of this study and finally Chapter 7 is aggregation of references of all papers, which are used in this study.

Chapter 2

LITERATURE REVIEW

There are numerous studies which examined the impacts of culture, religion and religiosity to female labor participation (FLFP) in different combinations respectively. Therefore, the theoretical economists and empirical researchers provide quantitative literature on the culture, religiosity and religion are as main factors to effect female labor participation. It's definitely effect the economic growth. In this chapter, we will review the previous studies on barriers to female labor participation.

Many micro level studies have proposed valuable understanding of economic and social association of rural areas in the developing countries that undertook the household as unit of analysis, where focus is given to household as the locus of decision making. In this type of society male is considered as a head of household and as decision maker. In this way, this direction has neglected the part of women to manage the household and it also ignored their functioning for the welfare of economy. By extending such kind of development policies have also ignored the role of women as focused interest groups (Cain, 1979). Therefore, Women's role to economic growth can't be ignored.

2.1 Culture and Female Labor Participation

Culture is a vital element to form the societies. It includes the norms, values, behavior, way of thinking and attitudes. Before starting the literature review, it is essential to mention the definition of culture. Culture is complete code of mankind's information, belief, and conducts that depends upon the capability for gaining and diffusing information to ensure the success of generations; and norms and values, social systems, and material qualities of a cultural, religious.

Starting with the importance of culture, whether it has influence on economic growth. Initially, many economists used to ignore the worth and importance of culture. But over the time, researchers came to realize the worth of cultural factors to determine the individual behavior. Because, if agents don't follow the predicted pattern or behavior. It may be just because of that different agents are linked with different culture, ethnic groups and races or even have different ideologies (Tsebelis, 1997). Role of culture in economic behavior cannot be neglected. Evidence show that diffused behavioral changes of a culture may significantly affect decision making (Henrich, 2000).

Similarly, importance of culture and economics was analyzed by Fernández (2010). Numerous studies on culture and economics were reviewed. Epidemiological approach was used to capture the changes in outcomes of different alien groups living in the same state. Cultural priorities and views have their own value in the sense that, even when they are eliminated from the environment in which they are initiated, they remain in active state to affect the individual decisions. However, that there was a little bit merging over the time both in economic consequences and in behaviors. This shows, not amazingly, that fluctuations in culture are in accordance with a new environment. Various issues like as female labor force participation, fertility, labor market regulation, redistribution, growth, and financial development were discussed (Fernández 2010).

Many empirical researchers try to link the culture and economic development. Some researchers analyzed the causal relationship between culture and economic development for example Tabellini (2010). Culture was constructed by using different indicators like as: ethics, views, like as trust and respect for others, and confidence in individual self-determination from the WVS data by considering 69 regions of

European countries. To separate the external changes in culture, two historical variables were used as instruments, the political institutions of several centuries and literacy rate at the end of the 19th century. The political history and societal history of Europe gave a great source of changes in variables, political institutions and literacy rate at the level of region. The part of culture due to history was having high correlation with current economic development at regional level, after the control of concurrent education, urbanization rates around 1850, and national effects (Tabellini, 2010).

So, the importance of culture cannot be neglected. Culture has its own worth to effect the economic growth of a country because it highly affects the individual behavior. In this way, it also has influenced the decision of female individual to join labor force. This is why, it is being considered in our analysis of impact of patriarchal norms on female participation and role of religion and religiosity.

Many previous studies have studied the impact of patriarchal norms, religion and religiosity on FLFP separately by including control variables. In this way, many studies analyzed the impact of culture along with many control variables on female labor participation. For example Clark *e*t al. (1991), Niels & Jeroen (2007), Contreras & Plaza (2010), Ho (2011), Diwan &Vartanova (2017) analyzed and Sarkhel & Mukherjee the effect of culture on female labor participation by including different control variables.

In this way, these both studies of Clark *e*t al. (1991), Niels & Jeroen (2007), Contreras & Plaza (2010), Ho (2011), Diwan &Vartanova (2017) and Sarkhel & Mukherjee used the culture as focused variable along with different kind of micro and macro variables to capture the upshot of culture on labor participation. Therefore, the study

checks out the impact of patriarchal norms on FLFP and also to check the role of religion and religiosity, culture is added as main focus variable. But this study includes the comprehensive definition of variable of culture. Culture is constructed by using different indicators like as tolerance and respect, trusting, control, confidence, participatory and obedience (Williamson, 2011). Inglehart & Baker (2000) checked the role of modernization, cultural change and persistence of traditional values to the economic development. Study took the data of different 65 societies. Both the great changes in culture and the persistence typical values of culture were founded. Industrialization resulted in shift away from traditional values of culture like as rational, tolerant, trusting and participatory indicators (Inglehart & Baker, 2000).

Firstly, researchers started to find out that what is the impact of culture on female labor participation? Clark *e*t al. (1991) analyzed the impact of patriarchal norms on female participation. A cross sectional analysis was undertaken by including 75 nations, whose data was available on WVS. Women's share of labor force was treated as dependent variable. International dependency, level of economic development and culture were treated as independent variables. Religious affiliation was included as culture. Both economic factors and cultural factors were included. Cultural factors not only relate to level of share of women in labor force but in some cases, it led to variations in this level. A solid positive relationship between economic development and increase in share of women in labor force was detected (Clark *e*t al., 1991).

Another study took the culture as main variable and examined its impact on women's formal labor market participation (LMP) (Niels & Jeroen, 2007). Women's participation in labor market of Egypt, Jordan, Morocco, Syria & Tunisia was analyzed by using the representative data that covered over 50,000 women and over 65 districts by including five MENA-countries. Women's formal labor market

participation (LMP) was treated as dependent variable and many independent variables like demographic variables, household information variables, district characteristics, culture and national level differences were included into the model. Desires, opportunities and attitudes played a vital role at different levels in the decision of females to join the formal labor market or restrict them to join labor market. Anyhow, tertiary education looks clearly the most significant aspect for increasing women's formal labor market participation (Niels & Jeroen, 2007).

Similarly, role of cultural factors in female labor participation was analyzed by Contreras & Plaza (2010) in Chile. Female labor participation was modeled as a function of demographical factors and cultural factors. Data of International Social Survey Program (2002) was used by Contreras & Plaza (2010) for analysis. It was suggested that women who had more typical norms or values toward gender roles and those who had narrow thinking about socio cultural opinions show lesser participation in labor force. Education increased the chance of participation of women in the labor force and it was also found that there was a concave pattern between age and participation of women in labor force. Existence of children who were not yet not going to school had a negative effect on the chance of women participation in labor force. If woman had a life partner (that she was married or having living relationship with someone) significantly decrease the chance of women participation in labor force (Contreras & Plaza, 2010).

Ho (2011) analyzed the same impact of culture on female labor participation but by including both Hofestede's five-dimension cultural model (Hofstede 2005) and Globe's eight-dimension cultural model as a proxy for culture. Data set of International Social Survey Program (ISSP) was used. An indicator variable for labor force participation (LFP) equal to one if the female respondent was currently

employed and zero if otherwise as dependent variable was built. Independent variables like as demographical factors, HDI, GDP and TUD (Trade Union Density) and family income along with two alternative proxies for culture were used. Globe culture like as gender egalitarianism and uncertainty avoidance had positive association with female labor force and assertiveness had a negative association with female labor force. Globe culture study rather than the Hofstede study was a better proxy for culture (Ho, 2011).

A similar study was conducted by Diwan &Vartanova (2017) to check the effect of patriarchal culture on participation of females in labor force by using the data of last two waves World Value Survey (WVS) 2005 and 2013 of 80 countries. Similarly, in this analysis female labor participation (FLP) was treated as dummy dependent variable. Religious affiliation was used as patriarchal culture. Education, age, marital status, number of children and religious affiliation and measure of relative household income at individual level were included into the model. And macro level variables were also included like as log of GDP per capita, size of agriculture, manufacturing, government expenditures, as a share in GDP, share of civil servants in total labor, regions by geographical location and by main religions. It was argued that FLFP can be raised through the effect of better-quality education on income of a household, but also through its effect on patriarchal values and on negotiating position of women (Diwan &Vartanova, 2017).

Another study specifically conducted for India to check the impact of culture on FLFP by Sarkhel & Mukherjee. Data of India Human Development Survey Data (IHDS) of 2004-05 was used. Binary dummy dependent variable took a value one if the individual was working more than 240 hours in a year and 0 otherwise to show workforce participation and struggle in the labor market. Many demographical

variables and household's total income were used as independent variables. Estimation was done by using probit model. Females belonging to stronger patriarchal background would do worse in the labor market as compared to those females who were from liberal families and, such impact of family culture wouldn't be detected for the men but there were some differences in the observed results depending on the site (rural/urban) of work and nature of job (Sarkhel & Mukherjee).

Some studies like Cain *e*t al. (1979), Hosgar & Smits (2008) and Fernández (2013) extended this research and they found the effect of culture on married female to join labor force. Because the preferences of women who are married to join labor force are different from the preferences of unmarried women. Initially, Cain *e*t al. (1979) analyzed class, patriarchy and women's work in Bangladesh. Data set with comprehensive details on time allocation, collected from 1976 to 1978 in Char Gopalpur, a village of Mymensingh District of Bangladesh, was used to study roles of married women in rural economy. First dependent variable was all currently married women and second dependent variable poor currently married, both with independent variables as women with presence of young child (dichotomous variable), age of women and value of household assets were estimated. Evidence show that due to poverty men's support for women had decreased. Male's employment situation in rural Bangladesh had decreased (Cain *e*t al., 1979).

This is why, Hosgar & Smits (2008) took the data of 1998 Turkish Demographic and Health Survey (TDHS) and analyzed the variations in female labor participation of married women. Labor market position as a dummy dependent variable and many demographic independent variables, occupation of the husband, living in an extended family, region, urbanization/migration status, language and gender role attitude index. Women involved in the formal economy were more educated, had companions with

sophisticated professions, had less children, lived in the West and urban areas, were less bounded by their families and had less typical gender role attitudes. Results supported the U-curve hypothesis, which forecasted that as modernization increase, women engagement in labor force first decrease and then increase (Hosgar & Smits 2008).

In this regard, Fernández (2013) analyzed the evolution of female labor force participation over a century due to culture change. Data of different sources Economic Report of the president (1986), Current Population Reports, P-60 series, IPUMS and the U.S. Census were used to examine this evolution process. Role of variations in culture in creating the histrionic growth in married female labor force participation over the last century was analyzed by Fernández (2013). A model of culture in which each person had diverse views about the relative returns in long run for females who participate in the market versus those who used to stay at home was developed. Beliefs had endogenously through a process of learning across generations. Females were supposed to learn regarding the payouts of working in market in long run by detecting private and public indicators. This process basically produced the S-shaped diagram for women labor force participation. It analyzed that, the model determined a new role for variations in wages through their impact on learning across generations and study analyzed that, this adjustment highlighted the role of changes in wages was numerically significant in several years (Fernández, 2013).

It is very important to evaluate the effect of culture on immigrant women's labor force participation (Read, 2004). The decision of immigrant women to join labor force is effected by cultural factors. Because there is always the contribution of immigrant women in labor force. This was analyzed by Read (2004) to check the cultural influences on Immigrant Women's Labor Force Participation in the case of Arab-

American. Data of U.S. Census and a national mail survey of Arab-American women were used. Two dummy dependent variables Labor force participation and Labor force commitment full time employed were used. Independent variables were cultural factors, nativity, religious affiliation, conviction in spiritual inerrancy, religiosity over life cycle, homogamy, Arab spouse, non-Arab other half, gender traditional values, educational attainment, surrounding factors, supplementary family income, labor market region, children in home, adults in home and age in years. Positive impact of human capital on the performance of immigrant female labor force was recorded. Remarkably, all aspects of Arab culture didn't restrict women participation in labor force. At least in case of Arab-American women, gender traditionalism, religiosity, and homogamy had significant results for their decisions of labor force (Read, 2004).

As time passes, many researchers have been including number of important factors regarding this research topic. Some researchers [Ancetol (2000), Farré & Vella (2007)] also included male attitudes towards female labor participation as culture and discussed the intergenerational transmission of gender role attitudes and its implication on female labor participation. Cross-country variation in female labor force participation rates and the role of male attitudes toward family and sex roles were analyzed by Ancetol (2000). Culture was explained by including the attitudes of males towards female labor participation. Data of International Social Survey Program (ISSP) 1994 were used. Employment status was considered as dummy dependent variable. Information regarding attitudes toward family and gender roles of individuals was included. Linear probability model was used for estimation. Then demographic variables and human capital features were included and re-estimated equation. Old, educated and divorced women used to participate more in labor market. Household size had negative impact on female labor participation. Culture

had an impact on female labor participation and females were more likely to participate in labor market if men of that area considered female labor participation in a favorable way (Ancetol, 2000).

Ancetol (2000) discussed the male attitudes towards female labor participation as culture and then its implication on decision of women to join labor force and then Farré & Vella (2007) took another feature of transmission of gender role attitudes and examined its impact on female labor participation. Data of National Longitudinal Survey of Youth 1979 (NLSY79) and the Young Adults of the NLSY79 were used. Sample was consisted of mother-child pairs. The attitudes of a woman have a statistically significant impact on her children's opinions towards occupied women. Additionally, transfer of culture effects the decisions of female participation in labor market. An opinion of a woman concerning the role of women in the labor market and family not only effects the decision of her daughter in labor market force, but also had an equal solid relationship with contribution of the wife of her son in labor force. Similarly, results indicated that the transfer of gender role and attitudes contribute to the consistent of economic status across generations (Farré & Vella, 2007).

Similarly, religious factors are as important as culture to predict the behavior of females to join labor force. Study includes religious factors along with cultural and demographic factors to check the behavior of females to join the labor force. Weber (1905) provides basis to include religious factors in this study.

2.2 Religion, Religiosity and Female Labor Participation

Everyone has some sort of spiritual beliefs but it doesn't imply that everyone has religion. Religion is concerned with some sort of faith in creator of this universe, some sort of holy books, and many teachings taught by every religion. Every religion

has its own some characteristics and that use to obey by its followers. So, some religions don't allow the free mixing of males and females. They don't allow the females to go to educational institutes and not let them do participate in job market. But some religions like promote working in labor market. Protestantism was one of the major reasons who attract the people of western world to join market and it lead to rise in capitalism (Weber, 2013). Now this section will review the literature on religion and religiosity as an important factor to determine female labor participation and its impact on economic growth.

Some studies made a critical review and arrangement of latest research to check the role of religion in economic and demographic behavior. Latest literature was reviewed by Lehrer (2008) to check the role of religion in economic and demographic behavior in the United States. This literature review included the effect of religion on human capital investment, supply of labor, accumulation of wealth, creation of union and termination and fertility. This helped to comment on the implications of religious distinction between husband and wife and also on the possible countervailing two ways in which religiosity had impact on demographic and economic behavior. Causality also exist on the reverse side, and there was also an increasing literature that help to know how economic and demographic explanatory variables effect the degree and form of participation in activities of religion, the way of swapping from one religious attachment to another, and other scopes of religious behavior. The inspiring latest development in this area reviewed forecast well for continual advancement.

Therefore, it is very necessary to consider the religious factors along with culture and control variables like education, marital status, social class and age to predict the females' behavior to join labor force. Lehrer (2008) reviewed the many articles and suggested a continual development in this field. Because it obviously helps to predict

the individual behavior regarding different matters and similarly it matters to determine the female decision to join labor force.

Initially, Lehrer (1995) analyzed the effect of religion on the labor supply of married women in case of U.S by using the survey data set from 1987-1988 National Survey of Families and Households (NSFH) for empirical analysis. Religion of both husband and wife, wife's education, wife's age, number of children in household, log of other family income, husband married before, wife married before, husband older than wife by 6 years or more, metropolitan area, non-metropolitan area and south as independent variables were included. Three different models based on life-cycle stages were estimated. Lehrer (1995) suggested that when youngest children existed in the home, this was effective and religion played vital role in the decisions of FLP. Then Lehrer (2008) reviewed many research papers and suggested continual advancement in this aspect of research.

Many previous studies like Morgan & Scanzoni (1987), Lehrer (1995), Glass & Nath (2006), Kus (2011), Bayanpourtehrani & Sylwester (2013), Adeyem &*e*t al., (2016) and Alam *e*t al., (2017) have examined the impact of religious factors like religious affiliation etc on female labor participation.

In the very beginning, relationship between religious orientations and females expected continuity in the labor force was examined by Morgan & Scanzoni (1987). Data were collected through a mailed questionnaire, which was sent to senior female students of two land grant universities in the spring of 1983. Work expectations of college women were modeled by using path analysis. Paid work was treated as dependent variable and assertiveness, responsiveness, sex role attitudes were treated as mediating variables in this study. Similarly, background factors like mother's

employment, mother's education, self-esteem and religious devoutness were used. It was concluded that enhancement of devoutness reduce the working expectations of women in future as mediate certain intervening variables. Therefore, regardless of denominational label, if a female would be more devout then it would decrease the college females' expected continuity in labor force Morgan & Scanzoni (1987).

This aspect of research extended by empirical researchers and Glass & Nath (2006) undertook only married women and those who were going to add a child to a family. Impact of religious traditionalism on the behavior of married women to join the labor force was examined. Data of National Survey 1988-1993 of Families and Households were used. Variations in labor supply of women, job and wages were treated as a function of traditional denominational membership and conventional belief of religion, other economic and demographic variables were treated as constant. As Whites were concerned, conventional denomination declined the labor supply of women due to a marriage or a marital birth, while conventional spiritual beliefs had greater impacts on the choice of occupation and wages. As Blacks were concerned, conventional religious affiliation enlarged the labor supply of women of due to marital births, but both denomination and belief did not affect occupation and growth of wage. Similarly, the significance of ideology of religion for the understanding of persistent gender inequality in labor market was expressed by Glass & Nath (2006).

Similarly, the same analysis was done by Kus (2011) at macro level to examine the effect of religion on female labor participation rates by including different 138 countries. Data at macro level over the period of 1980 and 2005 were used and variations in effect of religion on FLP rate over the time. Ratio of female labor force participation to male labor force participation was used as dependent variable. The main independent variable was religion and other control variables were included.

Somehow, it was concluded by Kus (2011) that various religions had different impact on female labor participation rates in different areas of the world. Every type of religious variable negatively impacts the female labor participation rate except for "Other" religions.

Then this side of research continued and some studies tried to find out the evolution in female labor participation due to religious affiliation in Muslim countries. Bayanpourtehrani & Sylwester (2013) analyzed whether FLFP changed between 1985 and 2005 in a cross countries analysis due to the religion being practiced in these countries. Female labor participation rate was dependent variable and explanatory variables were religion, non-religious, Gross Domestic Product (GDP), labor force in agriculture, population that is rural, fuel exports as a percentage of GDP, Freedom House political rights index, Regional designations were included. Female labor participation rate was low in Muslim countries. But, the relationship between Islam and female labor force participation seriously reduce, when other control variables were included in the analysis, concluding that Islam was not the reason of diminishing female labor force participation as some had claimed. Finally, relationship between female labor force participation and religion was getting weak over time (Bayanpourtehrani & Sylwester, 2013).

Many studies undertook time series analysis and just undertook one country for different time period to examine the impact of religious affiliation on female labor participation due to the easiness of data availability like as Adeyem *e*t al., (2016), Alam *e*t al., (2017). A similar analysis for Indonesia was conducted by Alam *e*t al. (2017) to check the impact of religion on the participation rate of married women in labor force by using the data from the Integrated Public Use Micro data Series (IPUMS 2014). The 10% of data was taken from Indonesia's 2010 Population Census.

Woman's decision to work was used as dummy dependent variable and religion plus Other (women without religion), woman's age, completed education level, size of family, number of children under age 5 in the household, background, wealth, the woman's own characteristics and her partner or parents' characteristics (depending on marital status) as well as the region of the country in which she used to live were taken as explanatory variables. If everything was held constant, then it was suggested by Alam *e*t al. (2017) that Hindu married women in city areas were found to be more likely to work than Muslim married urban women, while Confucian married females in rural areas were found to be less probable to participate in labor force market than Muslim married rural women.

Similarly, Impact of religion on female participation in labor force in Nigeria was analyzed by Adeyem *e*t al. (2016). The Demographic and Health Surveys (DHS) and secondary data sets of 2003, 2008 & 2013 were used. Type of employment as a dependent variable and religion, types of earning and work place were included as independent variables. Logistic models were estimated and it was concluded that female participation in labor force enhanced from 39.3% to 48.1% ranging from 1990 to 2011 in Nigeria. The association between Islam and working at home remained significant in all datasets. Similarly, it was concluded by Adeyem *e*t al., (2016) that growth in female participation in labor force would release females from the snare of poverty and would make them able to speak for their rights in Nigeria.

This is why female labor force participation is very necessary to make them empowered and they can be aware of their own rights and can speak to get access them. It will help to empower the women and as well as it will strong the economic condition of a country. Particularly, in case of developing countries where most of the population is bound to the unnecessary customs, norms and values and they don't let

their women to participate in labor force. It hinders the empowerment of women and as well as economic prosperity of a country, Therefore, women should participate in labor force to be empowered their selves and as well their country.

Many previous studies also included different features along the female labor force participation on dependent side and then examined the impact of religious affiliation on them. Heineck (2004) considered the impact of religion on the married women participation in labor force. Researchers also checked the impact of religion on the wages of young women and predicted their behavior to join labor force for example Cornwell *e*t al. (2003). It was suggested that in case of sample females from all religious backgrounds, there was positive relationship between religious participation of a child and annual hours of work in adulthood. In case of conditional on hours worked, though, neither the frequency of religious participation nor affiliation in childhood had impact on hourly earnings as an adult. In case of Protestants, females who used to attend church commonly in their childhood more participate hourly in labor market per year. Moreover, females who were Lutherans or Methodists less participate as compared to Baptist backgrounds. Finally, from the sample of all religions, there was no impact of denominational affiliation on the wage rate of Protestant adult females (Cornwell *e*t al., 2003).

Similarly, impact of religious affiliation on the participation of married women in labor force was checked by Heineck (2004) in case of Germany. Data of German Socio-Economic Panel (GSOEP) was used. In cross sectional analysis, job status was treated as multilevel dummy dependent variable and independent variables were religious affiliation variables, age, education, residence municipal size, health condition and registered disabled. Multinomial logit model was estimated. Similarly, in longitudinal analysis, job status was considered as binary dummy dependent

variable and age, education, non-labor income, differences in belief between spouses, dummy strength of belief, registered disabled and self-reported health condition were included as explanatory variables. Heineck (2004) found that religious affiliation itself had weak impact on a decision of female whether to work or not. But, females who attached to importance of belief in their lives supposed to work less than females without a solid belief. Moreover, it was found that being partner with a strong belief also negatively effects a female´s labor supply.

Many recent studies have included other variables like as patriarchal norms, culture, social class, identity, ethnicity, caste along with religious factors to predict the women' behavior to join labor force for example Caris & Hayo (2012), Audretsch &*e*t al. (2013), Alvi (2016), Koyuncu & Ozen (2017) and Nnoromele (2017) included such variables along with religious affiliation in their studies to determine the women' decision to join labor force.

Initially, the effect of religion, social class on entrepreneurship choice was examined by Audretsch &*e*t al. (2013). For this purpose, individuals who reported themselves as self-employed, salaried employees, casual laborers and unemployed were included on dependent side. Religious affiliation, variables of caste system, and male, female, age, marital status, education, rural or urban variables were included on independent side. Data of National Sample Survey Organization (NSSO) of India were used and it was suggested by Audretsch &*e*t al. (2013) that both religion and the caste system effect entrepreneurship, suggesting a relationship between religion and economic behavior.

Another study Caris & Hayo (2012) took the Islam and culture as "Identity" and investigated female labor force participation and checked the role of identity in Arab countries. Akerlof and Kranton's (2000) approach of "identity economics" was used

to analyze the vital role of Islam and culture for FLP. Significant effects of identity on female labor market participation were found. Furthermore, results suggested that in the Arab region, Muslim women didn't join the labor market less as compared to non-Muslim women, but those who had strong traditional identities had lesser chance of participation in labor market (Caris & Hayo, 2012).

Similarly, Alvi (2016) aimed to analyze the evolution of differences of participation rate of women in labor force between females from the Hinduism, Schedule Caste/Schedule Tribe (SC/ST) and Muslim societies in India. Study took the data of period 1983/84 to 2011/12 from seven rounds of the National Sample Survey. Approaches offered by DiNardo-Fortin-Lemieux and Oaxaca-Blinder to divide the gaps in labor force participation rate (LFPR) into explained and unpredicted parts were used. Schedule Caste/Schedule Tribe of Hinduism gap had been gradually reducing over time, while the gap between Hindu and Muslim had remained high. Additionally, it found that variables of private and household level had an unimportant role in predicting the persistent low levels of Muslim female labor force participation rate.

Similarly, recently two studies Koyuncu & Ozen (2017) and Nnoromele (2017) run the same analysis. Koyuncu & Ozen (2017) analyzed the effect of religious, ethnic, linguistic and cultural diversity on female labor force participation. Cross-section data from these data sources: A. Alesina, E. La Ferrara (2005), "Ethnic Diversity and Economic Performance", Journal of Economic Literature, James Fearon (2003), "Ethnic and Cultural Diversity by Country", Journal of Economic Growth, UN data and WDI were used. Variations in religion, ethnicity, and language significantly had a positive impact on level of female labor force participation in that country (Koyuncu & Ozen, 2017).

Another recent study of Nnoromele (2017) examined the effects of religion and patriarchal norms on female labor force participation across 40 countries. Study used the micro-level data from the International Social Survey Programme (ISSP) 2012: "Family and Changing Gender Roles IV and macro-level data from World Bank Group's Women, Business, and the Law 2012 database. This investigation supported the supposition that the women who were more religious and have conventional mentality too probably less participates in paid employment but also found that the particular religion of a female that she was being practiced, apart from the cultural religions (Judaism and Hinduism), didn't affect the female participation in labor force. Nnoromele (2017) recommended that all the things like institutions of a country, socio and political context, and cultural geographic heritage have much worth and value in the way that religiosity was clearly shown in women's participation in labor force and it effects the economic growth.

In this way, many studies also undertook culture, social class, ethnicity and caste system along with religious affiliation to check the behavior of women to join the labor force. Because both are important variables to capture the real effect of these kinds of patriarchal norms and religious factors on the female labor participation.

Research regarding this topic didn't stop here because many researchers considered another important religious factor of religiosity in their analysis to extend the research and to capture more and more realistic approach. Chadwick & Garrett (1995), H'madoun (2010), Guner (2013), Guetto *e*t al. (2015) and Abdelhadi (2017) considered religiosity as focused variable along with religion and culture to check its impact on female labor force participation.

Starting from Chadwick & Garrett (1995) examined the relationship between women's religiosity and employment. Church of Jesus Christ of Latter-day Saints (LDS) was under consideration. Study examined the relationship between religiosity of women and employment by using the data from a sample of 3000 women between the ages of 20 and 60 years living along the Wasatch Front in Utah during the Sprint of 1991. Employment, many demographic variables like age, education, religious preference, marital status, and number of children were included in model. The findings of study disclosed that religiosity had a significant relationship with LDS church women's employment. Employment had relationship with activities of religion, attendance at primary level and holding church positions (Chadwick & Garrett, 1995).

Then H'madoun (2010) measured religiosity as religious affiliation, passion of belief and involvement in services and proposed a study of the impact of religiosity on participation of women in labor force across 48 countries. Study took LFP of a women, a dichotomous dummy variable as dependent variable and measuring the school, age, and marital status, sources of income, health indicator, social class and religiosity as explanatory variables. A significant difference between religious and non-religious women in labor force participation was found. The probability of being employed reduces with an individual's strength of belief, but there was an increment of women participation in labor force with increase in involvement in religious activities. When it considered country-fixed effects, most variables of religiosity lose their significance. H'madoun (2010) suggested that organizations, economic structure and socio-political setting of a country matter for the technique of religiosity comes into the play in the decision of women's work decisions.

But Guner (2013) used proxy of parental religiosity like as: a portion of party's votes in the elections of 1973 to analyze female labor supply of Turkey in 2008. Both

cultural and religiosity proxies were included in an extended model. Culture, religiosity and female labor supply in case of Turkey was analyzed by Guner (2013). This study focused on migrants that come from different areas with different culture but they lead to contribute to same economic and institutional system. This study used the micro level data that was available by Turkey Demographic and Health Survey (TDHS) of 2008. It was specified that female migrants from provinces with the higher (minor) shares of the religious party votes of 1973 were less (more) probable to join the labor force in 2008. Significant effect of both variables like culture and religiosity were separately found on female labor supply.

Another study with the same feature was analyzed by Guetto *e*t al. (2015) and he examined religiosity, attitudes of genders and female labor participation and fertility decisions in Europe. Guetto *e*t al. (2015) constructed the religiosity by using indicators like as importance of God and religion in life and its formal dimension like as church attendance and confidence in church. Second Demographic Transition (SDT) theory was discussed to show the importance of variations in values and attitudes to describe the pattern of low fertility and raising female labor market participation. Data from the European Values Study (EVS) were undertaken, which includes many European countries over three decades (1990, 1999 and 2008 waves). Religiosity was positively associated with fertility and housewifery and while attitudes regarding gender were only associated with decisions of women regarding participating in labor market. This study focused on the need to integrate cultural and structural explanations, telling about lack of family policies and the inflexibility of formation procedure of the family as possible procedures to remove this paradox.

Similarly, the most recent study of Abdelhadi (2017) analyzed Religiosity and Muslim Women's Employment in the United States. Pool data from the 2007 to 2011

Pew Research Center surveys of American Muslims were used. Dependent variable was employment status and independent variables were attends mosque, prays daily at least, religion very or somewhat important, wears hijab, education, marital status, children younger than 18 in home, ethnicity, immigrant status, age and region. It was found that there was positive relationship between mosque attendance and employment. But other religiosity measures had no significant impact on women's employment. On the other hand, Education, ethnicity, and childbearing were solid and reliable explanatory variables of Muslim women's employment. Abdelhadi (2017) suggested that practicing Islam does not restrict the American Muslim women from engaging in paid employment.

Predominantly in case of developed countries, when females' participation in labor force increases then it has positive and good effect on productivity of labor (Karabıyık, 2012). The participation of adult females in developing nations is very change from each other. For example, if it was about 60% of females were participating in Kazakhstan, Cambodia, and Ghana then at the same time females' participation in Algeria, Egypt, and Iran were only 20% (ILO, 2006; UN, 2007). As the working power empowers women then females' participation in labor force must be focused to increase the rate of females' participation in labor force. It will empower them and it will lead to economic growth of developing countries (Hoşgör & Smits, 2006).

2.3 Conclusion

As it is seen that there are numerous studies considering culture, religion and religiosity separately and many also studied their combination for example culture and religion Nnoromele (2017) and similarly culture and religiosity by Guetto *e*t al. (2015) but there is no study which includes all these three important variables with

widen definition of each by including control variables. In our study, culture and religiosity are being constructed by considering their regarding indicators. Culture is constructed to capture the self-deterministic values and similarly religiosity is constructed to capture the strength of religious beliefs of an individual female. This study also includes religious affiliation based on Weber (1905) as many studies only check the religion's impact on FLFP for example Adeyem &*e*t al. (2016) and Alam *e*t al. (2017). That's why this study is including culture, religion, religiosity and many other control variables like marital status, education, age and social class to capture the effect of culture, religion and religiosity on female labor force participation.

Chapter 3

THEORETICAL FRAMEWORK

The topic of gender discrimination in labor force in the form of less female labor participation is a sound research topic in labor economics. This study includes many important factors like culture, religion and religiosity along with many control variables to check the causes of low female labor participation.

In this study, those cultural, religious and demographical factors are being considered, which effect the females' decision to participate in labor force. This study considers the cultural, religious and demographic factors, which effects the females' choice to participate in labor force. So, this study is based on three types of major theories. Rationale is that study will include all these kinds of variables to check the behavior of female labor force participation based on standard three theories. This study theoretical framework is grounded in the theory of rational choice theory (Homans, 1961), theory of bounded rationality (Simon, 1955) and economic sociology and the sociology of religion, explained in book "The Protestant Ethic and the Spirit of Capitalism" (Weber, 1905). Theoretical framework is based on these three important theories. In this chapter, study will have details about these three base theories separately.

3.1 Rational Choice Theory

The rational choice theory was originally proposed by George Homans (1961). Initially, he set up a basic idea of exchange theory. This theory was grounded in axioms of behaviorist psychology. Rational choice theory postulates that individuals seem to be motivated by the needs or goals that direct to their preferences. Individuals take their decisions within definite given limitations and based on information

available. Simply, this association between preferences and limitations can be realized in a technical form of the relationship (Scott, 2000).

In this way, Rational choice theory assumes that individuals always pursue to their goals and try to maximize their benefits by achieving their goals subject to given constraints. The main idea of rational choice theory is surrounded with the analysis of equilibrium. Equilibrium is defined as a point from which no rational agent will deviate (Tsebelis, 1997).

This study is focusing the impact of culture and role of religion and religiosity on female labor participation. So, along with demographic factors cultural and religious factors are also being included to check the female's decision to join labor force. So, this theory justifies the inclusion of demographic variables like age, education, social class and marital status etc.

Traditionally, in a household, females are considered as homemaker. They are supposed to be homemaker, care taker of husband and children at home. Production of home considers such tasks as, caring for children, cleaning, and cooking meals etc. Therefore, in most of the societies across the world, women are preferred to stay at home. So, for a female, decision of participating in labor force for a wage is only practicable if the wages at least compensate the costs of working in labor force (Nnoromele, 2017).

It suggests that as compared to males, elasticity of participation of females in labor force is lower to wages. In this way, their attachment is so weak to the labor market (Jaumotte, 2003). Women use to participate in labor force only when they will have higher wages. But data of wages are not directly available, so study includes demographic factors age, education, marital status and social class etc. to capture the

effect of wages (H'madoun, 2010). These factors are the best reflection of wages. So, these factors are added in the model of study to capture the effect of wages on the decision of female labor force participation.

In this way, females prefer to work at the age when wages are high as per suggestion of base theory. This shows that an individual female is more probably to join the labor force during that period of life when wage is relatively high (H'madoun, 2010). It is assumed that married female use to participate more in labor force. This may be the case because the relationship between females' characteristics and their association with their families and female participation in labor force at this time of point has altered (Roberts, 2003). Now the trend has changed up to some extent. Females participate along with men to have more sophisticated and up standard life style, which seems impossible without their participation in labor force. That's why self-reported variable for marital status for each individual female is included in the model. It is assumed that females from a high social class background are expected to have easy approach to job opportunities because these females are supposed to be more social (Spierings, 2007). So, study includes a self-reported indicator of social class for females from WVS. Education variable is added to capture the effect of wage and when a female is highly educated, then she gets high wage relatively (H'madoun, 2010). Therefore, study includes the variable of education for each individual female that shows the age of her higher education attained.

But if we assume that a mathematical model predicts optimization or some set of actions. But some agents don't follow the predicted pattern or behavior. It may be just because of that different agents are linked with different culture, ethnic groups and races or even have different ideologies (Tsebelis, 1997).

Similarly, there are many factors other than economical factors, which effect the decision of female labor force participation. But they are ignored in classical economic theories. These factors are very important to check the behavior of female labor force participation or any individual's behavior. As this study is only dealing with the behavior of females to participate in labor force. Therefore, study will consider only females. Many important cultural factors and religious factors are mostly ignored to predict this behavior. In this way culture has vital importance and it is being included in our model based on Bounded Rational theory by Simon (1955).

3.2 Theory of Bounded Rationality

The second and very vital theory, which provides theoretical framework of this study, is the theory of bounded rationality (Simon, 1955). Herbert Simon (1916-2001) was highly well-known to economists for the theory of bounded rationality. This theory elaborates economic decision-making of an individual. Simon himself named it as "satisficing". It is a combination of two words: "satisfy" and "suffice" but it is against or opposite to the concept of classical economics. He believed that individuals do not pursue to maximize their advantage from a specific act. Meanwhile, it is not possible for them to adapt and digest all the pieces of information that will be required to do such task. He used to think that a human mind automatically limits itself. So, he put it as "cognitive limits" (Simon, 1905).

An individual is bounded to do anything. A person faces numerous limitations, whenever, individual want to take a decision. Sometimes, individual has less resource to do or to achieve anything. That makes an individual unable to perform such task. But sometimes, this is not the case. An individual cannot do anything despite of having resources because individual is bounded by his society, customs and many

typical cultural factors. So, an individual takes a decision by keeping all the factors in view. So, that's why this study is based on theory of bounded rationality.

It is very clear that in many countries men are considered as rearer of whole family. Men mostly do a job for earning and to run the cycle of their households but this is not true for women because there is huge gap between males and females' participation in labor force across countries.Therefore, there is a question arise why this is. Which are the main reasons of this gap and why women don't participation in the same rate as men? But some of them are working but those are getting fewer wages as compared to men. There can be many reasons and some of them are variations in human capital and institutions of labor market across different countries. Whenever it is being discussed then one of main factors is culture. Culture of different societies accounts for this gap in different rates in different countries. Cultural factors like as changes in priorities regarding family structure and role of females in labor market versus in household. There is also international suggestion concerning the worth of factors of culture in the decision of female to enter into labor force. (Antecol, 2003)

It was discovered, to model economic outcomes, we cannot ignore the role of individual's choice. Which is the most difficult to predict in economic theories. So, it is generally accepted that culture plays a role in individual's behavior (Simon, 1955). Study is considering cultural factors.

Culture can be defined as the ideas, norms and values, and social behavior of a specific individual or a society (Cambridge Advanced Learner's Dictionary, 4th Edition). The culture will be constructed by using four indicators and these are as: tolerance and respect, trusting, control and obedience (Inglehart and Baker, 2000).

Data of these indicators are collected from WVS. Each individual female was asked questions about tolerance and respect, trusting, control and obedience to capture the picture of background of each female. It is assumed that women who had more typical norms or values toward gender roles and those who had narrow thinking about socio-cultural opinions show lesser participation in labor force (Contreras & Plaza, 2010). Therefore, culture is added in model based on bounded rationality theory.

Similarly, religious factors are as important as culture to predict the behavior of females to join labor force. Study includes religious factors along with cultural and demographic factors to check the behavior of females to join the labor force. Max Weber's theory provides basis to include religious factors in this study.

3.3 Max Weber's Theory (1905)

Max Weber was a German sociologist, philosopher, jurist, and political economist. His thoughts intensely affect the social theory and social research. He rejected the concept of mono-causality and he said any result or outcome can be due to various reasons (Tiryakian, 2009). His basic logical concern was about the rationalization, secularization, and bitterness that he linked with the growth of capitalism and modernism (Habermas, 1990). Weber is well known for his great job by merging economic sociology and the sociology of religion and his book is about the explanation of economic sociology and the sociology of religion and which is named as "The Protestant Ethic and the Spirit of Capitalism". In this book he anticipated that Protestantism was one of the major reasons who attract the people of western world to join market and it lead to rise in capitalism (Weber, 2013). He claimed that Protestantism has basic beliefs and views to boost capitalism. Therefore, it can be supposed that the Protestant has such religious principles and beliefs which boost up capitalism.

Weber highlighted the role of cultural effects rooted in religion as a source for understanding the origin of capitalism (Weber, 2013). Therefore, study considers the religious factors along with cultural and demographic factor to examine the behavior of females to join labor force.

In this study religious factor consists of two variables. The first one is religion affiliation and second is religiosity. The acceptance of and worship of a superhuman controlling power, especially a personal God or gods is known as Religion (Oxford Dictionary). Religion is a dummy variable to know the religious affiliation of each women being surveyed. It is being added into the model to get the information of religious affiliation of individual female.Some religious values restrict the women to enter in labor market like as Islam (Caris and Hayo, 2012). But at the same time there are some religions like protestant, which promote the people including women to join labor market (Weber, 1905). Somehow, various religions had different impact on female labor participation rates in different areas of the world (Kus, 2011). Data of this variable is taken from most recent wave of WVS 2010-2014.

Similarly, second and most important part of religious factor is religiosity and it can be defined as religious orientations and participation of an individual. Religiosity is concerned with the attendance of religious service of an individual. In this study, religiosity is being measured by combining four indicators from. These are three indicators and these are as: importance of religion, participation in religious activities and intensity of belief (H'madoun, 2010). It is assumed that there was a significant difference between religious and non-religious women in labor force participation. The probability of being employed reduces with an individual's strength of belief, but there was an increment of women participation in labor force with increase in involvement in religious activities (H'madoun 2010). Therefore,Intensity of belief is a

good measure of religious conservatism than religious affiliation (Glass & Nath, 2006).

Therefore, study examines the behavior of females to join labor force by including demographic, cultural and religious factors based on rational choice theory, bounded rationality theory and Max Weber's theory. Rationale is that study controls the relationships among variables in the presence of all three theories and checks its impact on the decision of females to participate in labor force. This study checks the impact of demographic, cultural and religious factors on female labor participation if study controls it by standard theories variables.

Chapter 4

DATA AND METHODOLOGY

4.1 Overview of Chapter

This chapter will go through the data and methodology, which are being used in analysis of impact of culture on FLFP, role of religion and religiosity. Firstly, it will discuss the construction of variables and their description. Secondly, study area is being discussed in this section. Thirdly, variables, indicators and their sources are described in a table. Then it will describe the methodology of this study. At the end, it will go through functional form of model.

4.2 Construction and Description of Variables

This chapter of the study consists of construction and description of variables that are being used in this study. Variables of culture and religiosity are being constructed by using different indicators. Culture is constructed by utilizing four self-deterministic valuesand these are as: tolerance and respect, trusting, control and obedience. Similarly, religiosity is constructed by using three indicators importance of religion in life, participation in religious activities and intensity of belief. These both variables are constructed by using Principe Component Analysis (PCA).

4.2.1 Female Labor Force Participation

The dependent variable is the female labor force participation (FLFP) and it is dichotomous dummy variable, taking a value of one if the individual reported having paid employment e.g.Full time employee (30 hours a week or more) = 1, Part time employee (less than 30 hours a week) = 2, self-employed= 3, and zero otherwise if reportedNo, no paid employment: retired/pensioned=4, housewife not otherwise

employed=5, student=6, unemployed=7, other=8" (Read, 2004). Data for this variable is collected from a question of World Values Survey (WVS) and question is "Are you employed now or not? If yes, about how many hours a week? Yes, has paid employment: Full time employee (30 hours a week or more) = 1, Part time employee (less than 30 hours a week) = 2, self-employed= 3, No, no paid employment: retired/pensioned=4, housewife not otherwise employed=5, student=6, unemployed=7, other=8". This question was asked from everyone in this survey of WVS and under consideration wave is 2010-2014. But this study includes the data of females only. This variable is placed on dependent side of the model of this study (H'madoun, 2010). All essential focus and control variables are mentioned below.

4.2.2 Culture

First focus variable of this study is culture. Culture is constructed by using different four indicators like as tolerance and respect, trusting in people, control over life/freedom and obedience (Williamson, 2011). These indicators are taken from World Value Survey. Here culture is constructed to capture the self-expression values of an individual female. It will be constructed by using Principle Component Analysis (PCA).

First self-expression value indicator of an individual female to capture the culture is trusting in people and question of survey is "Generally speaking, would you say that most people can be trusted or that you need to be very careful in dealing with people? Most people can be trusted =1, Need to be very careful =2. Data for this indicator is taken from World Values Survey (WVS) and wave 2010-2014 is considered for whole analysis of this study.

Second indicator of culture is control. This question is as given in WVS as “Some people feel they have completely free choice and control over their lives, while other people feel that what they do has no real effect on what happens to them. Please use this scale where 1 means "no choice at all" and 10 mean "a great deal of choice" to indicate how much freedom of choice and control you feel you have over the way your life. Scaling is done from 1 to 10 in this survey. Data of this indicator is taken from recent wave of WVS 2010-2014 for analysis.

Third indicator of culture is tolerance and respect for other people. The following survey question is used to determine the importance of tolerance and respect in a society: This question is as given in WVS “Here is a list of qualities that children can be encouraged to learn at home. Which, if any, do you consider to be especially important? Data of this indicator is taken from recent wave of WVS 2010-2014 for analysis.

Fourth indicator of culture is obedience. Same question was asked in survey for obedience as same as for respect. The following survey question is used to determine the importance of obedience in a society: This question is as given in WVS “Here is a list of qualities that children can be encouraged to learn at home. Data of this indicator is taken from recent wave of WVS 2010-2014 for analysis.

Study uses Principe Component Analysis (PCA) to construct culture. It is assumed that women who are strong believer of negative belief like obedience then culture leads to has negative impact on FLFP but if they have strong positive beliefs like tolerance and respect, trust in people and control over life/ freedom then culture will has positive effect on FLFP.

4.2.3 Religion

The second focus and important variable is religion. The acceptance and worship of a superhuman controlling power, especially a personal God or gods is known as Religion (Oxford Dictionary). Religion is also one of the most important factors to determine female participation in labor force market. In our study, religion is a binary dummy variable and it shows the religious affiliation of each female respondent of WVS (Alam *e*t al., 2017). If an individual female has belonging to any religious affiliation = 1 and none = 0. The data for this variable is taken from a question of WVS; it shows that each female individual is affiliated with which religion. "Do you belong to a religion or religious denomination? If yes, which one? No: do not belong to a denomination =0, Yes: Roman Catholic =1, Protestant =2, Orthodox (Russian/Greek/etc.) =3, Jew =4, Muslim =5, Hindu =6, Buddhist =7, Otherwise =8". It shows the religious affiliation of each individual female. There are some religions like protestant, which promote the people including women to join labor force market (Weber, 1905). So, this is why it is being included in this study to analyze its effect on female labor force participation.

4.2.4 Religiosity

Religiosity is also included along with religion to conduct this analysis. Religiosity is about religious orientations and participation of an individual. Religiosity is concerned with the attendance of religious service of an individual. To construct the variable of religiosity study includes three indicators and these are as: importance of religion in life, participation in religious activities and intensity of belief. Data of these indicators are collected from World Value Survey (WVS). It will be constructed by using Principle Component Analysis (PCA).

First trait is importance of religion that how important it is in your life. To capture this trait question is taken from WVS and question is as "indicate how important it is in your life. Would you say it is religion, 1= for very important, 2= for rather important, 3= for not very important and 4= for Not at all important". This question is added to capture the importance of religion in the life of every reported individual female. Data of this indicator is taken from latest wave of WVS 2010-2014.

The second trait of religiosity is participation in religious activities and this question is given in WVS as "Apart from weddings and funerals, about how often do you attend religious services these days? 1= more than once a week, 2= once a week, 3= once a month, 4= only on special holy days, 5= once a year, 6= less often, 7= never practically never". Respondents are being classified in three categories, how; often individual female attends religious services. The first category consists of female respondents who participate "never" or "less than once a year" in religious services. Individuals who attend religious services regularly (i.e. once a week or more), and those who attend rarely (i.e. "once a month", "once a year" or "only on special holidays"), make up the second and third category respectively (Heineck, 2004).

Third and last trait of religiosity is concerned with intensity of belief. It is simply supposed that those females who are grown up in a religious environment will specify their affiliation with that religion; even at present they do not consider themselves as a religious person, or even declare themselves atheist. To capture this effect of being religious, dummy that equals one if the respondent declares herself "religious", and zero otherwise (H'madoun, 2010). Data of this indicator is taken from this question "Independently of whether you attend religious services or not, would you say you a 1= a religious person, 2= not a religious person, 3= an atheist" of WVS and recent wave of 2010-2014 is considered. It is the third indicator of religiosity.

Study uses Principe Component Analysis (PCA) to construct this variable of religiosity. Data of this variable is taken from most recent wave of WVS 2010-2014.

4.2.5 Age

Age of each female respondent is expressed in years. Age is included in our analysis based on rational choice theory because age has a great impact on the female labor force participation. It shows the female labor force is more likely to participate in the period of her life in which wage is high. So, its inclusion in our study is essential (Caris & Hayo, 2012). Data of this variable is taken from a WVS question and it is as "This means how old you are? (write in age in two digits)".

4.2.6 Education

Education is a very important variable for our study to capture the impact of culture on female labor force participation (FLFP) and role of religion and religiosity. Here education is the age in years at which the female respondent completed her education. Higher education leads to higher wage (H'madoun, 2010). So, it is essential to include this variable in our analysis. Data of this variable is got from WVS question and it is as "At what age did you (or will you) complete your full-time education, either at school or at an institution of higher education? Write in age in two digits". It is designed to capture the completed year of education of an individual female. It is assumed that as one year of completed education of an individual increases then her FLFP also increases.

4.2.7 Marital Status

Marital status of female respondent is another important variable of our analysis. It is assumed that married female use to participate in labor force. This may be the case because the relationship between females' characteristics and their association with

their families and female participation in labor force at this time of point has altered (Roberts, 2003). Now the trend has changed up to some extent. Female' participates along with men to have more sophisticated and up standard life style, which seems impossible without their participation in labor force. To capture this effect in our study, a binary dummy variable is included which equals one if the female respondent is married (or living together as married) and zero otherwise.Data of this variable is got from WVS question and it is as "Are you currently, 1= married, 2= living together as married, 3= divorced, 4= separated, 5= widowed, 6= single".

4.2.8 Social Class

Females from a high socio-economic class are assumed to have more access to job opportunities because these females are supposed to be more social (Spierings, 2007). Somehow, high class women are more well-connected. Because female from upper class high level of education and they are highly in touch with media to be aware of market conditions. Moreover, such women have high positive beliefs towards life due to their upbringing in such high classenvironment. That's why their chance of participation in labor market increases.Data for this variable is accessed from WVS and question is as "People sometimes describe themselves as belonging to the working class, the middle class, or the upper or lower class. Would you describe yourself as belonging to the 1= upper class, 2= upper middle class, 3= lower middle class, 4= working class, 5= lower class". This study uses a binary dummy variable if individual female belongs to upper class = 1 and lower class = 0.

4.3 Study Area

This study examines the impact of culture on FLFP and role of religion and religiosity. This study includes six models to check the role of culture, religion and

religiosity to predict the female labor force participation. This study includes 53 countries over the world. This study considers the most recent wave of WVS 2010-2014. This study considers a cross sectional analysis by using logit model. The list of countries is mentioned in Appendix A.

4.4 Data and Sources

This study is conducted to check the impact of culture on female labor force participation and role of religion and religiosity. This study includes many demographic variables like age, education, marital status, social class, culture and religious factors like as religious affiliation and religiosity. In this section, study discusses the data for variables, indicators and their sources which are being used in this study. The table is given below:

4.4.1 Table for Description of Variables

The given table gives the detail study of variables, indicators and sources. This study includes cross sectional analysis by using the data of recent wave of WVS 2010-2014 considering 53 countries all over the world, whose data is available in most recent wave 2010-2014. The list of countries is mentioned in Appendix A.

Table 4.1: Description of Variables

Variable	Indicators	Source
Female Labor force Participation (FLFP) (Dummy dependent variable)	It took value one if individual was having paid employment and zero otherwise.	World Values Survey (WVS).
Culture	• Tolerance & Respect • Trusting in people • Control over the life • Obedience	World Values Survey (WVS). PCA is used to construct it.
Religiosity	• Importance of religion in life • Participation in religious activities • Intensity of belief	World Values Survey (WVS). PCA is used to construct it.
Religion	Religious affiliation of individual female	World Values Survey (WVS).
Age	Variable is shown in years.	World Values Survey (WVS).
Education	It is age in years when respondent completed her education.	World Values Survey (WVS).
Marital Status	Marital status of respondent at the time of survey	World Values Survey (WVS).
Social Class	Current social status of respondent.	World Values Survey (WVS).

4.5 Estimation Strategy

Study has main three variables culture, religion and religiosity in our regression equation. Other than these main three variables, it has control variables age, completed education level, marital status and social class. In this analysis, dependent variable is dummy variable, which is female labor force participation. Regression equation can be estimated through ordinary least square (OLS) but due to some limitations, it cannot be applied to find out the estimates of this analysis because if Study applies OLS then it will give unbiased and inconsistent estimates. It will cause very serious problem of heteroskedasticity, problem of boundedness (predicted values of dummy do not exist between the range of 0 and 1) and generally lower R^2 values. It will cause wrong inferences. Moreover, the interpretation of coefficients is ambiguous

and outlandish. These are some flaws of OLS, which don't allow to apply it on regression equation when dependent variable is dichotomous dummy variable.

As in this analysis, the dependent variable is dichotomous dummy variable. Study took female labor force participation (FLFP), a dichotomous dummy variable as dependent variable, it took value one if individual was having paid employment and zero otherwise. So, it is more appropriate to apply logit model to find out more reliable estimates (Hoşgör and Smits, 2008). So, Logit model is applied when it is based on logistic distribution and probit model is applied when it is based on normal distribution. Study has number of series and it is not essential that all of them are following normal distribution because it is rare so study applies logit model to get the best results.

4.5.1 The Logit Model

Study has already discussed the problems of OLS, which don't allow the application of OLS on dummy dependent variable. So, these problems can be solved by taking odds. In the linear probability model (LPM), the dependent dummy variable is on left side, which shows the probability D_i can take any real value and it is not bound to be in correct range of probabilities (0,1). It is called the problem of boundedness and cannot be solved by linear probability model.

Now, this issue can be solved by taking two steps. Firstly, by taking the odd ratio of dummy variable and the odd ratio of dummy variable can be taken as under:

$$OddFLFP_i = D_i / 1\text{-}D_i$$

Where, female labor force participation (FLFP) is a dummy dependent variable. Here odd ratio can be defined as the ratio of success to its complement.

The second step is to take the natural log of this odd ratio of dummy dependent variable and it can be shown as under:

$\ln(D_i / 1\text{-}D_i)$ = logit model

As female labor force participation is a dichotomous dummy dependent variable, it took value one if individual was having paid employment and zero otherwise. If dummy takes value 1 then

$\ln (1 / 1\text{-}1) = +\infty$

a) As the probability D_i takes the value 1 and then logit approaches to positive infinity ($+\infty$).

If dummy takes value 0 then:

$\ln (0 / 0\text{-}1) = -\infty$

b) As the probability D_i takes the value 0 and then logit approaches to negative infinity ($-\infty$).

$$-\infty \leq \ln (D_i / 1\text{-}D_i) \leq +\infty$$

In this way, problem of boundedness is being solved to get the reliable estimates.

By using this in a linear regression we get logit model as:

$$\ln(oFLFP_i) = \beta_\circ + \beta_1 Cul_i + \beta_2 Rl_i + \beta_3 Rlgsty_i + \beta_4 Cul_i * Rl_i + \beta_5 Cul_i * Rlgsty_i + \beta_6 X_i + \mu_i$$

Where $oFLFP_i$ is odd ratio of female labor force participation of logit model and it solves the problem of boundedness as mentioned in above two statements (a and b).

As logit model solves the problem of boundedness and it is a non-linear relationship between dummy dependent variable and explanatory variable. So, it has "S" inverse shape curve and which is as same as standardize normal distribution. When study

applies logit to regress the explanatory variables against the dummy dependent variable then it gives various types of measures to interpret the results like as odds and odds ratio, percentage change and marginal effects. But preference is given to interpret the marginal effects to explain the logit model. Now, explaining the importance of marginal effects:

4.5.2 Marginal Effects

The description of logit model is not as simple as in ordinary least square (OLS) and linear probability model (LPM). In OLS and LPM relationship between dependent and independent variable is linear but in logit model the relationship between dummy dependent variable and independent variable is non-linear. So, estimated coefficients of logit model don't give the real picture of data. Then study moves to the interpretation of marginal effects of logit model to show the real picture of the analysis.

So, study use to interpret the marginal effects of coefficients estimates. Marginal effect is first order partial derivative of dummy dependent variable with respect to corresponding independent variable. It is suggested that marginal effects are best way to explain the logit model (Zelner, 2009). Marginal effect can be interpreted as one-unit change in explanatory variable will cause change (increase and decrease) in the probability of dependent variable (female labor force participation) by the magnitude of marginal change, ceteris paribus.

4.5.3 Principe Component Analysis (PCA)

Principle Component Analysis (PCA) is a standard practice in literature to make the composite index of culture e.g. Williamson (2009), Williamson (2011) and Inglehart

& Baker (2000) etc. That's why study applies PCA to make the composite index of culture and religiosity. PCA is being explained asbelow:

Principle Component Analysis (PCA) is a tool to reduce the dimension of a large set of variables into a small set of variables but still it consists of most of the information of large set of variables. Mostly, first principal component explains as much variation in the data set as much as possible and similarly each next component explains as much of the remaining variation in data set. PCA is used to select some variables from a larger set of variables, based on the phenomenon according to which there is a high correlation between original variables and principal component.

Factor loadings are also known as component loadings of PCA. These are the coefficients of correlation/covariance between the variables and factors. The square of factor loading is the percent of variance in that variable which is accounted by the factor. To gain this percent of variance of all variables explained by each factor, sum the addition of the squared factor loadings for that factor and divide it by the total number of variables. One more thing to note is that the sum of the variances of variables is equal to the number of variables as standardized variable has a variance of 1. This means nothing but division of eigen-value of factor by the number of variables.

Similarly, component scores of PCA are the scores of each case on each factor. This can be calculated for a given case for a given factor by taking the standardize score of the case on each variable and multiply it with corresponding factor loading of the variable for the factor that is given and add these products.

4.6 PCA for Culture

Similarly, this study constructs a composite index for culture. PCA is used to make this composite index. Culture uses four indicators like as trust in people, control over life (freedom), tolerance & respect and obedience. PCA for culture is given in Appendix B.

4.7 PCA for Religiosity

Similarly, this study constructs a composite index for religiosity. PCA is used to make this index for religiosity. Religiosity uses three indicators like as Importance of religion in life, participation in religious activities and intensity of belief. The table for PCA of religiosity is given in Appendix C.

4.8 Model Specification

In this section of this study, model Specification is conducted. Basically, this study has specified six models based on analysis. This study is checking impact of patriarchal norms on female labor force participation (FLFP) and also role of religion and religiosity. So, there are six models to identify the culture's impacts on FLFP and also the role of religion and religiosity.

Study designed six models and first model is designed to capture the impact of culture on FLFP to achieve the first objective of the study. Similarly, second model is design to capture the impact of culture in the presence of religion on FLFP. Third model is designed to investigate the effect of culture in the presence of religiosity. Model fifth and sixth include the interaction term of culture and religion and culture and religiosity respectively to capture the effect of culture in the presence of religion and religiosity respectively. Last model is designed to capture the last and main objective

of the study to check the impact of culture in the presence of religion and religiosity on FLFP.

4.8.1 First Model

This is the first model to identify the role of self-deterministic values on FLFP by including demographic variables like age, education, marital status and social class in this model. This model includes culture, age, education, marital status and social class to check the impact of culture on female labor force participation. This is cross-sectional study and it includes countries all over the world and uses the most recent wave of World Values Survey (WVS) 2010-2014. This $\mathbf{X_i}$ denotes all demographic control variables like age, education, marital status and social class.

$$\mathbf{FLFP_i = \beta_\circ + \beta_1 Cul_i + \beta_2\, X_i + \mu_i}$$

1. $FLFP_i$ = Female Labor force Participation (dichotomous dummy dependent variable)
2. Cul_i = Culture (Index)
3. X_i = vector of control variables
4. μ_i = Error term

4.8.2 Second Model

This is the second model to identify the role of religion on female labor force participation in the presence of culture by including demographic variables like age, education, marital status and social class in this model. This model includes culture, religion, age, education, marital status and social class to check the effect of religion on female labor force participation.

$$\mathbf{FLFP_i = \beta_\circ + \beta_1 Cul_i + \beta_2 Rl_i + \beta_3\, X_i + \mu_i}$$

1. $FLFP_i$ = Female Labor force Participation (dichotomous dummy dependent variable)
2. Cul_i = Culture (Index)
3. Rl_i = Religion
4. X_i = vector of control variables
5. μ_i = Error term

4.8.3 Third Model

This is the third model to identify the role of religiosity on female labor force participation in the presence of culture by including demographic variables like age, education, marital status and social class in this model. This model includes culture, religiosity, age, education, marital status and social class to check out how religiosity effects the female labor force participation (FLFP).

$$\mathbf{FLFP_i = \beta_{\circ +} \beta_1 Cul_i + \beta_2\ Rlgsty_i + \beta_3\ X_i + \mu_i}$$

1. FLP_i = Female Labor force Participation (dichotomous dummy dependent variable)
2. Cul_i = Culture (Index PCA)
3. $Rlgsty_i$ = Religiosity (Index PCA)
4. X_i = vector of control variables
5. μ_i = Error term

4.8.4 Fourth Model

This is the fourth model, which is constructed to check the impact of patriarchal norms on female labor force participation (FLFP) in the presence of religion. This

model consists of culture, religion, interaction term of culture and religion and control variables. This $\mathbf{X_i}$ denotes all demographic control variables like age, education, marital status and social class. Functional form of model is given below:

$$\mathbf{FLFP_i = \beta_{\circ +} \beta_1 Cul_i + \beta_2 Rl_i + \beta_3\ Cul_i * Rl_i + \beta_4\ X_i + \mu_i}$$

1. $FLFP_i$ = Female Labor force Participation (dichotomous dummy dependent variable)
2. Cul_i = Culture (Index PCA)
3. Rl_i = Religion
4. $Cul_i * Rl_i$ = interactive term of culture and religion
5. X_i = vector of control variables
6. μ_i = Error term

4.8.5 Fifth Model

This is the fifth model, which is developed to examine the effect of culture on female labor force participation in the presence of religiosity. It checks the effect of culture on the behavior of women to join labor force market by the inclusion of religion along with culture into the model. This model consists of culture, religiosity, and interaction term of culture and religiosity and control variables. This $\mathbf{X_i}$ denotes all demographic control variables like age, education, marital status and social class. Functional form of model is given below:

$$\mathbf{FLFP_i = \beta_{\circ +} \beta_1 Cul_i + \beta_2\ Rlgsty_i + \beta_3\ Cul_i * Rlgsty_i + \beta_4\ X_i + \mu_i}$$

1. $FLFP_i$ = Female Labor force Participation (dichotomous dummy dependent variable)
2. Cul_i = Culture (Index PCA)

3. $Rlgsty_i$ = Religiosity (Index PCA)
4. $Cul_i*Rlgsty_i$ = interaction term of culture and religiosity
5. X_i = vector of control variables
6. μ_i = Error term

4.8.6 Sixth Model

This model is constructed to check the impact of patriarchal norms on FLFP in the presence of religion plus religiosity. As this is the main model of study. This model consists of culture, religion, religiosity, age, education, marital status, social class, interaction term of culture and religion, similarly, interaction term of culture and religiosity. This is the main model of the study and it captures the impact of culture on the behavior of females to join labor force market and it also analyzes the role of religion and religiosity. Functional form of model is stated below:

$$\mathbf{FLFP_i = \beta_{\circ +} \beta_1 Cul_i + \beta_2 Rl_i + \beta_3 Rlgsty_i + \beta_4 Cul_i*Rl_i + \beta_5 Cul_i*Rlgsty_i + \beta_6 X_i + \mu_i}$$

1. $FLFP_i$ = Female Labor force Participation (dichotomous dummy dependent variable)
2. Cul_i = Culture (Index PCA)
3. Rl_i = Religion
4. $Rlgsty_i$ = Religiosity (Index PCA)
5. Cul_i*Rl_i = interactive term of culture and religion
6. $Cul_i*Rlgsty_i$ = interactive term of culture and religiosity
7. X_i = vector of control variables
8. μ_i = Error term

Finally, the last and most important model six of this study is added above to capture impact of culture on FLFP and also to show the role of religion and religiosity. Because this model includes all the important focus and control variables to capture the effect of culture, religion and religiosity on FLFP. As in above models, each model separately capture the effect of each focus variable on FLFP but this model actually captures the main objective of study effect of culture on FLFP and role of religion and religiosity to determine the behavior of individual female to join labor force.

Chapter 5

EMPIRICAL RESULTS AND DISCUSSION

Study aims to analyze the effect of self-deterministic values on FLFP and to check the role of religion and religiosity. This chapter considers the details on empirical results of this study to test the hypothesis. This study includes various objectives and to achieve them study considers 6 models. This study tests number of hypothesis like as: does culture effect female labor force participation? Second, does religion has any role to determine the female labor force participation? Third, is there any role of religiosity to determine the female labor force participation? In this way, study estimates 6 models by using logit to achieve the main objectives of study.

In this way, model 1 will estimate impact of patriarchal norms on FLFP. Model 2 will present the effect of self-deterministic values and religion on FLFP. Similarly, Model 3 will show the impact of culture and religiosity on female labor force participation. Interaction terms are also added to capture the role of religion and religiosity in the presence of culture to determine the participation of female labor force. Model 4 will present the role of religion in the presence of culture to determine the participation of female in labor force. Similarly, Model 5 will capture the role of religiosity in the presence of culture for the determination of female labor force participation. Finally, Model 6 will include both the religion and religiosity in the presence of culture to capture the role of religion and religiosity to capture the main objective of study.

Now coming to the estimation of these models, these all are estimated by using logit model and follow logistic distribution. As this study has binary dummy dependent variable and estimation is done by utilizing logit model. The results of logit are not directly interpretable because it is not easy to understand the logit results. Therefore,

many researchers suggest that estimates of logit must be transformed into odd ratio or marginal effects. But many researches prefer marginal effects over odd ratio (Benzer, 2007). So, this study will follow the modern trend and pattern and will use marginal effects for interpretation. Economists usually prefer calculating marginal effects because it is simple to go through them and interpret. Moreover, extreme values can't affect the marginal effects (Premier Insights, 2017).

Secondly, this is very crucial to consider the use of logit model or probit model to estimate such models. Many researchers use probit model for estimation when sample size is large and it is based on normal distribution. But many researchers like as Amemiya (1983) and Stock & Watson (1988) found that there is a minor difference of size of coefficients between logit model and probit model. Therefore, marginal effects of all models are computed for logit regressions and described below:

5.1 Determination of Female Labor Force Participation

Main aim of the study is that how cultural values effects the FLFP and to investigate the role of religion furthermore religiosity for the determination of female labor force participation. In this way, 6 different models are estimated to achieve this objective and these all models are discussed below separately.

5.1.1 Culture and Female Labor Force Participation

Model 1 of Table 5.1 shows the empirical results of equation 1, this includes the culture as focused variable along with control variables like age, age^2, years of completed education, social class and marital status. The column of model 1 shows the positive association of culture with FLFP. The marginal effect of patriarchal norms is 0.2843 and particularly implies that there is 28 percent chance that the culture has positive and significant impacts on the female labor force participation.

Culture is made of four self-deterministic values: tolerance and respect, obedience, freedom and trust on people (Williamson, 2011). As the positive beliefs like tolerance and respect, freedom and trust on people are high in females then it leads to positive impact on female labor force participation. Data are collected from WVS for both developed and developing 53 countries. So, stronger the positive beliefs lead to have positive impact of culture on female labor force participation. One more important feature, as time is passing, developing nation is also leading to modernization like as developed nation and that results in shift away from traditional values of culture (Williamson, 2011).

The second and important control variable of model 1 is "Education", which is completed years of education of individual female. The marginal effect of education in model 1 is 0.1701 and specifically it implies that the probability to join labor force of individual female increases with 17 percent if year of completed education of an individual female increases. It is very obvious because as all control variables are capturing the effect of wages so when years of completed education increases then female individual will has more sophisticated job and her wages will be high in this regard her participation in labor force will be high as per suggestion of rational choice theory by Homans (1961). In this regard, result of this study is as same as suggested by H'madoun (2010).

Another control variable of model 1 is "age" and marginal effect of age is 0.1505, which is positive and significant. The marginal effect of age shows that there is chance of female labor force participation (FLFP) increases with 15 % if age of a female increases by one year. It means when the age of female will increase the probability of her participation in labor force will increase. Interestingly, when we included the term of age square, sign of marginal effect -0.1804 of age square term

became negative and it follows the traditional non-linear pattern as suggested by H'madoun (2010). In this regard, as age increases then chance of female labor force participation increases but after a critical point of age, participation of females starts to decrease.

Now coming to the interpretation of third and important control variable, that is social class in column 1 of table. The marginal effect of social class is 0.1526; it is positive and significant too. It implies that there is probability of female labor force participation increases with 15 percent if individual female belongs to upper class because such women mostly have higher level of education and more opportunities to join labor force. Our results are similar to the findings of H'madoun (2010).

Another important independent and control variable is marital status of individual female. The marginal effect of marital status is 0.2206; it is positive and significant. It shows that there is a chance of female participation increases with 22 percent if individual female is married. This may be the case because the relationship between females' characteristics and their association with their families and female participation in labor force at this time of point has altered (Roberts, 2003). Now the trend has changed up to some extent. Females participate along with men to have more sophisticated and up standard life style, which seems impossible without their participation in labor force.

This is how culture significantly affects the female labor force participation. Now model 2 will incorporate the dummy variable of religious affiliation and which is mentioned in column 2 of table as "Religion". This model will check the role of religion to determine the FLFP.

5.1.2 Culture, Religion & Female Labor Participation

Now, this model 2 checks the role of religion to determine the female labor participation. In this model, culture and religion are added as focused variables and rest of variables are control variables. The sign of marginal effect of culture in model 2 is again positive and significant and it is 0.1469. This presents that there is a 14 percent probability that patriarchal norms has positive impact on female labor force participation (FLFP). The same justification goes for it as same was done for marginal effect of culture in model 1.

The second important focused variable in this model 2 is Religion. It shows whether individual female has belonging to any kind of religious affiliation or no. The marginal effect of religion is negative and value is -0.0817. This implies that there is probability to join labor force of individual female decreases with 8 percent if individual female has belonging to any kind of religious affiliation.

The important and control variable is "Education", which shows completed years of education of individual woman. The value of marginal effect for education in model 2 is 0.1549 and particularly it presents that the chance to join labor force of individual female increases with 15 percent if year of completed education of an individual female increases. This phenomenon is very clear and can be justified as previously in model 1. In this regard, result of this study is similar to H'madoun (2010).

Another very important control variable is age. No doubt, age factor effects the female labor force participation. In this model, value of marginal effect of age is 0.2810 and it shows there is probability of female labor force participation increases with 28 percent if age of an individual female increases by one year. Surprisingly, when the term of age square was included in this model, sign of marginal effect -0.3372 of age square term became negative and it follows the same non-linear pattern

as suggested by H'madoun (2010). In this respect, as age increases then chance of female labor force participation increases but after a specific point of age, participation of females in labor force starts to decrease.

Similarly, another control variable in model 2 is social class. The marginal effect of social class is 0.2664; it is again positive and significant too. It shows the probability of individual female labor force participation increases with 27 percent if individual female belongs to upper class because these females generally have higher education and more opportunities to participate in labor force. Results are similar to the findings of H'madoun (2010).

Finally, coming to the interpretation of last variable of model 2 and this is marital status. The value of marginal effect of marital status is 0.4015; it is also positive and significant. It shows that there is a probability of individual female participation increases with 40 percent if individual female is married. This may be the case because the relationship between characteristics of females and their bounding with their families and participation of females in labor force at this time of point has changed (Roberts, 2003).

This is how culture and religion significantly affect the female labor force participation. Now model 3 will incorporate the index of religiosity along with culture and which is mentioned in column 3 of table as "Religiosity". This model will check the role of religiosity to determine the female labor force participation (FLFP).

5.1.3 Culture, Religiosity & Female Labor Participation

Now, this model 3 checks the role of religiosity for the determination of female labor participation. In this model, index of both culture and religiosity are added as focused variables and rest of variables are control variables. The sign of marginal effect of

culture in model 3 is again positive and significant and it is 0.1640. This indicates that there is a 16 percent probability that culture has positive impact on female labor force participation. It has positive impact on female labor participation because higher the positive beliefs of an individual female leads to positive impact of culture on female participation in labor force.

Another focused variable is a religiosity in the third model. Religiosity is constructed by using three indicators and these are importance of religion in life, participation in religious activities and attendance in religious services as suggested by H'madoun (2010). The marginal effect of religiosity is negative and its value is -0.0706. This indicates that there is a 7 percent chance that religiosity has negative impact on FLFP.

Now coming to the interpretation of all control variables of model 3, starting from Education. The value of marginal effect for education in model 3 is 0.1437 and particularly it shows that the chance to join labor force of individual female increases with 14 percent if year of completed education of an individual female increases. Another control variable is age. The marginal effect of age is 0.3477 and it shows there is probability of female participation increases with 34 percent if age of an individual female increases by one year. Similarly, marginal effect of social class is 0.287. It indicates the probability of individual female labor force participation increases with 28 percent if individual female belongs to upper class. Finally, marginal effect of marital status is 0.4469. It shows that there is a probability of individual female labor force participation increases with 44 percent if individual female is married.

Now model 4 will check the role of religion again in the presence of culture but addition is that we also add an interaction term of culture and religion in this model.

To, capture the clearer picture of role religion to determine the female labor participation in the presence of culture.

5.1 Table for Determination of FLFP

Determination of Female Labor force participation						
	Model 1	**Model 2**	**Model 3**	**Model 4**	**Model 5**	**Model 6**
Culture	0.2843***	0.1469*	0.1640***	0.2409***	0.1417***	0.2925***
	(0.1081)	(0.0832)	(0.0565)	(0.0663)	(0.0522)	(0.0756)
Religion		-0.0817***		0.0921***		0.1055***
		(0.0320)		(0.0374)		(0.0154)
Religiosity			-0.0706***		0.1744*	0.1114**
			(0.0100)		(0.0984)	(0.0496)
Religion*Culture				0.1985***		0.3014***
				(0.0158)		(0.0233)
Religiosity*Culture					0.2790***	0.0303**
					(0.0595)	(0.0130)
Education	0.1701***	0.1549*	0.1437***	0.2186***	0.2915**	0.3850*
	(0.0610)	(0.0801)	(0.0291)	(0.0441)	(0.1574)	(0.1776)
age	0.1505***	0.2810***	0.3477***	0.2969**	0.2878*	0.2797*
	(0.0592)	(0.0493)	(0.0972)	(0.1365)	(0.1582)	(0.1510)
age2	-0.1804***	-0.3372***	0.2082***	-0.4141*	-0.3947	-0.2245*
	(0.0559)	(0.1306)	(0.0581)	(0.2365)	(0.2976)	(0.1060)
social class	0.1526***	0.2664*	0.2877**	0.1356*	0.1554*	0.4237
	(0.0566)	(0.1560)	(0.1144)	(0.0716)	(0.0888)	(0.2850)
marital status	0.2206**	0.4015***	0.4469***	0.5679***	0.5290***	0.2374***
	(0.1083)	(0.1643)	(0.1992)	(0.1745)	(0.1394)	(0.0464)
Constant	0.3949***	0.6128***	0.7284**	0.4111	0.9321**	0.4818**
	(0.0657)	(0.1232)	(0.1899)	(0.3366)	(0.4224)	(0.1810)
Diagnostic Test						
McFadden's R2	0.3891	0.4276		0.4840	0.4127	0.5053
Count R2	0.7470	0.7765		0.8053	0.7685	0.7426

5.1.4 Culture, Religion, Interaction and Female Labor Force Participation

Model 4 consists of two focused variables culture, religion, their interaction term culture*religion and control variables. This model is estimated to check the role religion to determine the FLFP in the presence of culture.

Firstly, the marginal effect of culture is 0.2409 and particularly indicates that there is 24 percent chance that the culture has positive and significant impact on the female labor force participation (FLFP). As the positive beliefs like tolerance and respect, freedom and trust on people are high in females then it leads to positive impact on female labor force participation.

Secondly, important focused variable in this model 4 is Religion. It shows whether individual female has belonging to any kind of religious affiliation or no. The marginal effect of religion is positive and value is 0.0921. It shows that there is chance to join labor force of individual female increases with 9 percent if individual female has belonging to any kind of religious affiliation. Results of this study are similar to the results of Cornwell *e*t.al (2003).

Thirdly, most important variable is interaction term of culture and religion for the determination of female labor force participation. The marginal effect of interaction term is 0.1985. It implies that with the positive impact of culture, there is 20% more probability of female labor force participation if a female has also belonging to any religion. It means if an individual female has strong positive cultural beliefs then it leads to positive impact of culture on FLFP and as well as if she has belonging to any religious affiliation then probability of her participation in labor force increases.

Finally, we consider the interpretation of all control variables of model 4. The value of marginal effect for education in model 4 is 0.2186 and significant too. Particularly,

it shows that the chance to join labor force of individual female increases with 22 percent if year of completed education of an individual female increases. Another control variable is age. The marginal effect of age is 0.2969 and it shows there is probability of FLFP increases with 30 percent if age of an individual female increases by one year. Interestingly, when the term of age square was included in this model 4, sign of marginal effect -0.4141 of age square term became negative and it follows the same non-linear trend as found by H'madoun (2010). Similarly, marginal effect of social class is 0.1356 and significant. It indicates the probability of individual female labor force participation (FLFP) increases with 13 percent if individual female belongs to upper class. Finally, marginal effect of marital status is 0.5679. It shows that there is a probability of individual female labor force participation increases with 57 percent if individual female is married.

The next model 5 is designed to capture the role of religiosity to determine the female labor force participation in the presence of culture. An additional interaction term of culture and religiosity is added and results are discussed below.

5.1.5 Culture, Religiosity, Interaction and Female Labor Force Participation

This model 5 includes index of the culture, religiosity, interaction term of culture and religiosity and all control variables as added in previous models. This model shows the role religiosity to determine women participation in labor force in the presence of culture.

Firstly, the marginal effect of culture in model 5 is again positive and significant and it is 0.1417. This shows that there is a 14 percent chance that culture has positive impact on female labor force participation. It has positive impact on FLFP because

higher the positive beliefs of an individual female leads to positive impact of culture on female labor force participation.

Secondly, the focus variable is religiosity and marginal effect of is positive and significant too. The value of marginal effect is 0.1744. It indicates that there is a 17 percent probability that religiosity has positive impact on FLFP. It can be justified as more religious woman use to perform her duties with honesty and understand the values of religion. In this respect, she better understands the worth of a good, healthy and well balanced life.

Thirdly, another focus variable is an interaction term of culture and religiosity. The marginal effect of interaction term is 0.2790. It implies that with the positive impact of culture, there is 28% more probability of female labor force participation if a female has strong religious values. It means if an individual female has strong positive cultural beliefs then it leads to positive impact of culture on female labor force participation and as well as if she is more religious means strong beliefs of religiosity then probability of her participation in labor force increases.

Finally, we are leading to the interpretation of all control variables which exist in model 5. The marginal effect of education in model 5 is 0.2915 and significant too. Specifically, it presents that the chance to join labor force of individual female increases with 29 percent if year of completed education of an individual female increases. Another control variable is age. The marginal effect of age is 0.2878 and it indicates there is chance of female labor force participation increases with 29 percent if age of an individual female increases by one year. Moreover, when the term of age square was incorporated into the model 5, sign of marginal effect -0.3947 of age square term became negative and it follows the same non-linear pattern as

recommended by H'madoun (2010). Similarly, marginal effect of social class is 0.1554 and significant. It shows the chance of individual female labor force participation increases with 15 percent if individual female belongs to upper class. Finally, marginal effect of marital status is 0.5290. It presents that there is a chance of individual FLFP increases with 52 percent if individual female is married.

Now we will go through the main and final model of this study. It will contain all the necessary variables mentioned in this study to determine the FLFP. Results of this model 6 are discussed below.

5.1.6 Culture, Religion, Religiosity, Interaction and Female Labor Force Participation

In this model 6, we include index of culture and religiosity, religion, interaction of religion and culture, interaction of culture and religiosity, age, age^2, social class, education and marital status. This is the main model of this study and findings are as discussed below:

Firstly, the marginal effect of culture is 0.2925 and specifically indicates that there is 29 percent chance that the culture has positive and significant impact on the female labor force participation. Culture is made of four indicators tolerance & respect, obedience, freedom and trust on people as per suggestion of Williamson (2011). As the positive beliefs like tolerance and respect, freedom and trust on people are high in females then it leads to positive impact on FLFP.

Second focused variable is religion. It shows whether individual female has belonging to any kind of religious affiliation or no. The marginal effect of religion is positive and significant too. The marginal effect is 0.1055. This presents that there is chance to join labor force of individual female increases with 10 percent if individual female

has belonging to any kind of religious affiliation. Results of this study are similar to the results of Cornwell *e*t.al (2003).

Third important and focus variable is religiosity. The marginal effect of religiosity is positive and significant too. The value of marginal effect is 0.1114. It implies that there is 11 percent chance that religiosity has positive impact on female participation in labor force. It can be justified as more religious woman use to perform her duties with honesty and understand the values of religion. In this respect, she better understands the worth of a good, healthy and well balanced life.

Fourth and very important focus variable to capture the role of religion on female labor force participation in the presence of culture is interaction term of culture and religion. The marginal effect is 0.3014. It is positive and significant too. It implies that with the positive impact of culture, there is 30% more probability of female labor force participation if a female has also belonging to any religion. It means if an individual female has strong positive cultural beliefs then it leads to positive impact of culture on FLFP and as well as if she has belonging to any religious affiliation then probability of her participation in labor force increases.

Fifth and last focus variable of this model is interaction of culture and religiosity. The marginal effect of interaction term is 0.0303. It implies that with the positive impact of culture, there is 3% more probability of female labor force participation if a female has strong religious values. It means if an individual female has strong positive cultural beliefs then it leads to positive impact of patriarchal norms on labor force participation and as well as if she is more religious means strong beliefs of religiosity then probability of her participation in labor force increases.

Finally, now discussion is about all the control variables of the model. The marginal effect of education in model 6 is 0.3850 and specifically it indicates that the chance to join labor force of individual female increases with 38 percent if year of completed education of an individual female increases. It is very clear because as all control variables are capturing the effect of wages so when years of completed education increases then female individual will has more sophisticated job and her wages will be high in this regard her participation in labor force will be high as per suggestion of rational choice theory by Homans (1961). In this regard, result of this study is as same as suggested by H'madoun (2010).

Another very important control variable is age. The marginal effect of age is 0.2797 and it shows there is probability of female labor force participation increases with 28 percent if age of an individual female increases by one year. When the term of age square was incorporated in this model, sign of marginal effect -0.2245 of age square term became negative and it follows the same non-linear trend as suggested by H'madoun (2010). In this respect, as age increases then chance of female labor force participation increases but after a specific point of age, participation of females in labor force starts to decrease.

Now coming to the interpretation of third and important control variable, that is social class in column 6 of table. The marginal effect of social class is 0.4237 and it is positive. It shows that there is chance of FLFP increases with 42 percent if individual female belongs to upper class because such women mostly have higher level of education and more opportunities to join labor force. Our results are similar to the findings of H'madoun (2010).

Another important control variable is marital status of individual female. The marginal effect of marital status is 0.2374; it is positive and significant. It implies that there is a probability of female labor force participation increases with 24 percent if individual female is married. This may be the case because the association between females' characteristics and their relationship with their families and female participation in labor force at this time of point has altered (Roberts, 2003). Now the trend has changed up to some extent. Females use to participate along with men to have more sophisticated and up standard life style, which seems impossible without their participation in labor force. Now, looking at Count R^2 of sixth model and it is 0.7426 good enough to show the model strength through the right choice of predictors.

This model is the main model of this study which shows the impact of culture on female labor participation and also checks the role of religion and religiosity on female labor force participation. This model shows the significant impact of culture, religion and religiosity on female labor force participation. It is very important to investigate the role of religious factors on FLFP along with other factors as per recommendation of Nnormele (2017).

Chapter 6

CONCLUSION

Now coming to the conclusion of study, role of culture, religion and religiosity to determine the female participation in labor force can't be denied. Culture in the presence of religion and religiosity has significant role for the determination of female labor force participation at micro level. These all factors play a vital role for the prediction of women's behavior to join labor force and it effects the economic growth of a country in a great extent. Importance and worth of culture can also be seen from Inglehart & Baker (2000), similarly, importance of role of religion and religiosity can be seen from H'madoun (2010) and Alam *e*t al. (2017).

As Patriarchal norms and religious factors have great worth in literature to determine FLFP therefore to achieve the impact of culture and to determine the role of religion and religiosity on FLFP, this study has used the data of most recent wave 2010-2014 of WVS for different 53 countries. Selection of countries is done based on availability of data for all respected variables.

As FLFP is a binary dummy dependent variable so estimation is done by logit model. Results of this study show the worth of patriarchal norms and religious factors to predict the behavior of an individual female to join labor force. Study estimated different 6 models to capture this effect and found significant role of culture, religion and religiosity to determine female participation in labor force.

Furthermore, PCA is used to construct the culture and religiosity. Culture is constructed by using four indicators (Inglehart & Baker, 2000) and these are tolerance & respect, trust in people, freedom and obedience. Out of these indicators, three indicators show the positive attitude of an individual female like as tolerance

&respect, trust in people, freedom and obedience show negative attitude in sense more obedience less freedom to take a decision. Similarly, religiosity is constructed by using three indicators like as importance of religion in life, participation in religious activities and intensity of belief. At the end, religion shows the religious affiliation whether an individual female is religious or no.

Now concluding about the worth of control variables like as age, education, marital status and social class in the determination of female participation in labor force. These all have very significant impact on FLFP and suggested by various studies Hoşgör & Smits (2008), Guner (2013) and Abdelhadi (2017).

In this regard, study estimated 6 models and first model checked the impact of culture on FLFP, second and fourth model checked the role of religion in presence of culture, third and fifth model discussed the role of religiosity and finally last and model six captured the effect of culture in the presence of religion and religiosity on FLFP.

Results of this study show the positive significant impact of culture on FLFP as shown in each model and it shows the strong positive belief of an individual female. Secondly, religious female use to participate more in labor force as discussed in results of model six and fourth. Thirdly, if a female is more religious means that high religiosity index value leads to participate more in female labor force participation because more religious women is more loyal to her job and more regular in her work as she participates more in religious activities as it is clear from the results of model five and sixth. These are the major findings of this study.

Moreover, all control variables have significant impact on FLFP as clear from results of each model. For example, marital status was positive and significant. It implies that there is a probability of FLFP increases if an individual female is married. This may

be the case because the association between females' characteristics and their relationship with their families and female participation in labor force at this time of point has altered (Roberts, 2003). Now the trend has changed up to some extent. Education has positive and significant effect on FLFP as shown in each model. Similarly, Age has positive and significant effect on FLFP but squared term of age has negative impact and it implies that as age increases from a critical point then FLFP decreases and follows the same non-linear pattern as recommended by H'madoun (2010). Results are clear from each model except third model due to missing of some important focus variables. Similarly, social class is significant too and it indicates that the chance of an individual female labor force participation increases if an individual female belongs to upper class and this result holds for each of six models. Now, high Count R^2 of main model 6 shows the model strength through the right choice of predictors. This is how the importance of main objective of this study to capture the effect of culture on FLFP and role of religion and religiosity to determine the individual female' behavior to join labor force can be predicted from model six.

6.1 Policy Implication

As we know that women are the important pillar for social and economical development of a country as same as men. In this way, many factors shape the decision of an individual to join labor force. Therefore, this study recommends that the determination of females in labor force is analyzed in the presence of culture, religion and religiosity. So, effect of culture on FLFP in the presence of religion and religiosity is very significant. So, positive attitude regarding culture and religious factors of an individual woman leads to high female participation in labor force. So,

mental development of females in good manners can lead to more FLFP and it can cause high economic growth of countries.

6.2 Future Research Question

Culture, religion and religiosity are very important to predict the woman's behavior to join labor force. But it will also be very worthy to check the role of family, friends and close circle to shape the decision of individual female to join labor force. One can also include these important variables to determine the female labor force participation.

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APPENDIX A

List of Countries

1) Algeria	19) Jordan	37) Singapore
2) Armenia	20) Kazakhstan	38) Slovenia
3) Australia	21) Kyrgyzstan	39) South Korea
4) Azerbaijan	22) Lebanon	40) South Africa
5) Belarus	23) Libya	41) Spain
6) Brazil	24) Malaysia	42) Sweden
7) Colombia	25) Mexico	43) Taiwan
8) Cyprus	26) Netherlands	44) Thailand
9) Chile	27) New Zealand	45) Trinidad
10) China	28) Nigeria	46) Tunisia
11) Ecuador	29) Pakistan	47) Turkey
12) Estonia	30) Palestine	48) Ukraine
13) Georgia	31) Peru	49) United States
14) Germany	32) Philippi	50) Uruguay
15) Ghana	33) Poland	51) Uzbekistan
16) India	34) Romania	52) Yemen
17) Iraq	35) Russia	53) Zimbabwe
18) Japan	36) Rwanda	

APPENDIX B

Table of PCA for Culture

	% of Variance				Factor Scores			
	1	2	3	4	Trust in people	Freedom/ control	Tolerance & respect	Obedience
Algeria	0.5233	0.3000	0.1321	0.0440	0.4586	0.4493	0.3162	0.4898
Armenia	0.6093	0.2335	0.1239	0.0358	0.4098	0.5179	0.4274	0.4576
Australia	0.6830	0.1372	0.1331	0.0420	0.3380	0.3255	0.3141	0.4451
Azerbaijan	0.5181	0.2888	0.1413	0.0461	0.4597	0.4077	0.3474	0.4087
Belarus	0.6154	0.1802	0.1556	0.0461	0.5127	0.3546	0.5148	0.3432
Brazil	0.5734	0.1925	0.1833	0.0410	0.5044	0.4222	0.4326	0.4420
Colombia	0.5345	0.2765	0.1362	0.0430	0.3318	0.4961	0.4514	0.4118
Cyprus	0.6062	0.2253	0.1239	0.0399	0.4118	0.3120	0.4794	0.4909
Chile	0.6922	0.1126	0.1526	0.0348	0.3827	0.4181	0.3224	0.4472
China	0.5448	0.2662	0.1485	0.0348	0.4222	0.3401	0.3827	0.4930
Ecuador	0.7229	0.1280	0.1198	0.0307	0.3141	0.3120	0.3182	0.3734
Estonia	0.6451	0.1905	0.1239	0.0338	0.3910	0.3536	0.3671	0.3858
Georgia	0.5601	0.2314	0.1659	0.0317	0.3453	0.3370	0.3442	0.4878
Germany	0.7127	0.1167	0.1280	0.0492	0.3266	0.4462	0.3682	0.3193
Ghana	0.6799	0.2263	0.0614	0.0348	0.4846	0.3411	0.4472	0.5054
India	0.5837	0.2980	0.0819	0.0399	0.4378	0.4784	0.3151	0.3942
Iraq	0.7096	0.1219	0.1249	0.0481	0.4846	0.5127	0.5065	0.4857
Japan	0.5294	0.2775	0.1362	0.0451	0.4306	0.4347	0.4056	0.4274
Jordan	0.6103	0.2560	0.0829	0.0512	0.4108	0.3910	0.4503	0.4628
Kazakhstan	0.5304	0.2529	0.1649	0.0451	0.3276	0.4420	0.4046	0.3328
Kyrgyzstan	0.7311	0.1608	0.0645	0.0420	0.4025	0.4514	0.4815	0.5086
Lebanon	0.5069	0.3052	0.1362	0.0492	0.4389	0.5169	0.4472	0.3661
Libya	0.5929	0.2335	0.1085	0.0481	0.3546	0.3796	0.4503	0.5127
Malaysia	0.6042	0.2355	0.1178	0.0471	0.3973	0.3744	0.4285	0.3827
Mexico	0.5642	0.2683	0.1075	0.0492	0.4982	0.3484	0.5158	0.4222
Netherlands	0.7127	0.1577	0.0809	0.0389	0.3390	0.4264	0.4888	0.5148
New Zeal	0.5929	0.2652	0.1096	0.0369	0.4982	0.4555	0.4358	0.4420
Nigeria	0.6359	0.2222	0.0829	0.0461	0.4638	0.4722	0.3234	0.4701
Pakistan	0.5990	0.1905	0.1751	0.0369	0.3286	0.3650	0.5044	0.4046
Palestine	0.5816	0.2161	0.1700	0.0358	0.4742	0.3921	0.4545	0.3453
Peru	0.5120	0.2560	0.1782	0.0481	0.4763	0.3775	0.3598	0.4618
Philippi	0.5949	0.2294	0.1219	0.0420	0.3515	0.3442	0.3349	0.3151
Poland	0.6513	0.2284	0.0860	0.0317	0.3630	0.3723	0.3994	0.4982

	% of Variance				Factor Scores			
	1	2	3	4	Trust in people	Freedom/ control	Tolerance & respect	Obedience
Romania	0.6810	0.1096	0.1587	0.0471	0.4004	0.4285	0.3432	0.3162
Russia	0.6697	0.1475	0.1311	0.0492	0.3734	0.3224	0.3297	0.3994
Rwanda	0.7639	0.1126	0.0655	0.0502	0.4202	0.4680	0.4181	0.4389
Singapore	0.6472	0.2007	0.0963	0.0410	0.3266	0.4222	0.3598	0.3630
Slovenia	0.6011	0.2253	0.1352	0.0420	0.3193	0.4482	0.3983	0.4867
South Korea	0.6410	0.1608	0.1597	0.0420	0.3151	0.3806	0.3266	0.4815
South Africa	0.5775	0.2335	0.1403	0.0481	0.3401	0.4992	0.4514	0.3692
Spain	0.6124	0.2324	0.1075	0.0440	0.4316	0.3307	0.3203	0.4306
Sweden	0.6451	0.2109	0.1044	0.0338	0.4212	0.3598	0.5086	0.3910
Taiwan	0.6943	0.1516	0.1137	0.0410	0.4930	0.3515	0.4514	0.4014
Thailand	0.6994	0.1536	0.0952	0.0430	0.4077	0.3172	0.3255	0.4784
Trinidad	0.6257	0.2939	0.0543	0.0307	0.3401	0.3474	0.4576	0.3588
Tunisia	0.6093	0.2529	0.0942	0.0389	0.3567	0.3890	0.4066	0.3286
Turkey	0.5734	0.2284	0.1597	0.0399	0.3422	0.4430	0.3349	0.4545
Ukraine	0.6400	0.1618	0.1556	0.0481	0.3255	0.3474	0.3203	0.4826
United S	0.5724	0.2970	0.0860	0.0338	0.3536	0.4191	0.3890	0.5138
Uruguay	0.7014	0.1280	0.1157	0.0389	0.3276	0.4628	0.4971	0.4025
Uzbekistan	0.7352	0.1444	0.0778	0.0328	0.3744	0.4087	0.3245	0.3775
Yemen	0.5827	0.2406	0.1341	0.0399	0.4670	0.5096	0.4170	0.3952
Zimbabwe	0.6881	0.1710	0.0993	0.0451	0.3266	0.3588	0.4940	0.4150

APPENDIX C

Table of PCA for Religiosity

	%age of Variance			Factor Score		
	1	2	3	Importance of religion in life	Participation in religious activities	Intensity of belief
Algeria	0.6039	0.2954	0.1007	0.5837	0.4351	0.4957
Armenia	0.7405	0.2585	0.0009	0.4746	0.3993	0.4700
Australia	0.5510	0.3155	0.1335	0.4620	0.4031	0.4365
Azerbaijan	0.5787	0.3030	0.1183	0.4534	0.3775	0.4812
Belarus	0.4903	0.3521	0.1575	0.5741	0.4009	0.4630
Brazil	0.7044	0.2514	0.0443	0.6027	0.4438	0.4308
Colombia	0.7322	0.1918	0.0760	0.6178	0.3633	0.4464
Cyprus	0.5327	0.3001	0.1672	0.5207	0.4805	0.5052
Chile	0.5319	0.3301	0.1381	0.5816	0.4597	0.4812
China	0.7385	0.2495	0.0120	0.6492	0.4850	0.4815
Ecuador	0.7910	0.1837	0.0253	0.6553	0.4334	0.4690
Estonia	0.6450	0.2561	0.0988	0.5105	0.3691	0.4958
Georgia	0.8447	0.1391	0.0161	0.6547	0.3190	0.4286
Germany	0.7413	0.2436	0.0151	0.5380	0.3397	0.4844
Ghana	0.4353	0.4071	0.1575	0.4767	0.3731	0.5122
India	0.7756	0.1810	0.0434	0.5987	0.3089	0.4832
Iraq	0.6196	0.2822	0.0982	0.4547	0.4705	0.4334
Japan	0.6498	0.2347	0.1155	0.5879	0.3439	0.4579
Jordan	0.5975	0.3407	0.0619	0.5371	0.3861	0.4884
Kazakhstan	0.8869	0.0586	0.0544	0.5242	0.4874	0.4268
Kyrgyzstan	0.6886	0.2801	0.0314	0.6320	0.3030	0.4392
Lebanon	0.6279	0.3578	0.0144	0.6463	0.3272	0.4592
Libya	0.5991	0.2959	0.1050	0.6212	0.4305	0.5106
Malaysia	0.7181	0.2353	0.0466	0.5858	0.3912	0.4963
Mexico	0.7594	0.1832	0.0575	0.6337	0.3149	0.4219
Netherlands	0.4830	0.3956	0.1214	0.5355	0.4131	0.4696
New Zeal	0.7712	0.1724	0.0564	0.4753	0.3363	0.4832
Nigeria	0.6878	0.1939	0.1183	0.5386	0.4162	0.4930
Pakistan	0.7685	0.1968	0.0347	0.6303	0.4823	0.4966
Palestine	0.6182	0.3138	0.0680	0.5792	0.3684	0.4496
Peru	0.6523	0.2833	0.0644	0.5411	0.4983	0.4701
Philippi	0.3828	0.4072	0.2100	0.5904	0.4305	0.4626
Poland	0.7096	0.1870	0.1034	0.5585	0.4333	0.4653
Romania	0.5076	0.3844	0.1080	0.5721	0.4453	0.4885
Russia	0.7102	0.2392	0.0506	0.5702	0.4911	0.4612
Rwanda	0.6343	0.2870	0.0787	0.5065	0.3059	0.4923

	%age of Variance			Factor Score		
	1	2	3	Importance of religion in life	Participation in religious activities	Intensity of belief
Singapore	0.6811	0.2011	0.1179	0.4571	0.4944	0.5054
Slovenia	0.6440	0.3268	0.0292	0.6523	0.4357	0.5109
South Korea	0.5333	0.3147	0.1520	0.4926	0.3869	0.5007
South Africa	0.7162	0.1955	0.0883	0.6098	0.3815	0.4406
Spain	0.5781	0.3209	0.1010	0.5695	0.3233	0.5171
Sweden	0.7915	0.2005	0.0079	0.4902	0.4924	0.4570
Taiwan	0.5438	0.3396	0.1165	0.5838	0.4427	0.4828
Thailand	0.7157	0.1878	0.0964	0.4793	0.4931	0.4564
Trinidad	0.7578	0.2220	0.0202	0.6331	0.3407	0.4988
Tunisia	0.5784	0.3432	0.0784	0.6184	0.4598	0.4696
Turkey	0.7374	0.2464	0.0163	0.5165	0.4836	0.4801
Ukraine	0.4425	0.4038	0.1537	0.5930	0.3066	0.4560
United S	0.6255	0.3131	0.0614	0.5299	0.4471	0.4946
Uruguay	0.7612	0.1878	0.0509	0.5992	0.3459	0.4513
Uzbekistan	0.8203	0.1781	0.0017	0.5303	0.4023	0.4969
Yemen	0.7447	0.2374	0.0179	0.5999	0.3738	0.4556
Zimbabwe	0.5626	0.4059	0.0316	0.6184	0.4539	0.4982