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Socioeconomic and Demographic Factors Affecting Labor Force Participation in Pakistan

Mumtaz Hussain[1], Sofia Anwar[2] & Shaoan Huang[1]

[1] Center for Economic Research, Shandong University Jinan, China

[2] Department of Economics, Government College University Faisalabad, Punjab, Pakistan

Correspondence: Mumtaz Hussain, Ph.D. Industrial Economics Scholar, Center for Economic Research, Shandong University Jinan, China. Tel: 86-156-2892-0330. E-mail: mumtazkherani@hotmail.com

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Abstract

Labor Force Participation is the indication of relative supply of labor in the labor market and it is also very useful for the formulation of employment and human resource development. The main purpose of present study is to explore the demographic factors that directly or indirectly influence the labor force participation. The study is based on Micro-level data on different socioeconomic and demographic factors that have a deep effect on the labor force participation in Pakistan. The collected set of information of about 1,43,587 frequencies of 36,400 households was used in this study from the Labor Force Survey of Pakistan 2008-09. The research concluded that the level of education, training, age, location, residential period and being male has positive and significant impact on labor force participation.

Keywords: labor force participation, logit model, male and female labor force participation, education, training, labor force survey of Pakistan 2008-09, case study of Pakistan

1. Introduction

Pakistan is a highly populated country with 199.08 million people including 61.55 million labor force (Central Intelligence Agency, 2014) so there are many inherent problems linked to employment and labor markets such as education and professional training. In Pakistan 46% of the labor force have 1 year or less level of education, which is low in South-Asia region. The accelerated economic progress and growth necessitate changes in work techniques by improved technology, which is not possible without high skilled labor. In order to meet global challenges Pakistan has to pick up the pace and focus on educating labor force to produce highly skilled labor through various short term and long term training programs. A major part of its population is young people, which require special training programs and employment opportunities. Women not considered so much active in labor force because they are counted in home management. The literacy rate of women is also very low as compared to men. Further the female labor force is not skilled, their wage rate is very low and they also face several other social barriers in the labor market. The labor force participation is estimated on the basis of the Crude Activity Rate (CAR) and Refined Activity Rate (RAR). The RAR gives a relatively better picture of change in the labor force participation in the country because it is comprised of the active labor force. Both male and female labor force participation rate is very important for the development. The CAR for rural areas is 38.2 % comprised of 49.1% for the male and 17.9 % for females because more female family workers are involved in agricultural activities. The RAR is 45.2 %, which is greater than the CAR 32.2, which gives the better picture. Further, the RAR for rural areas is again greater than the urban areas because the labor force participation rate of females in rural areas is high as compared to urban areas. The LFP (Labor Force Participation) rates trend of previous 8 periods for both CAR and RAR is shown by the graph below.

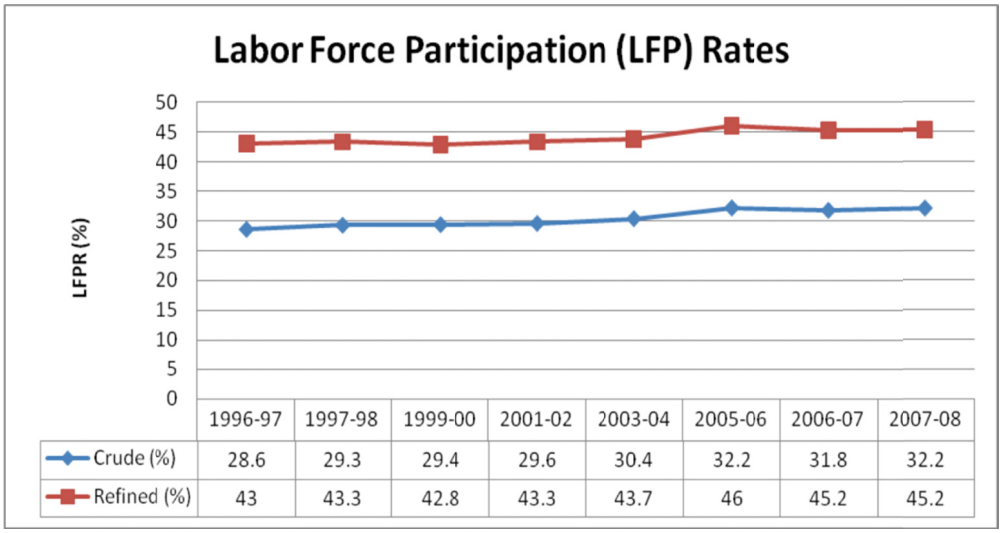

Figure 1. Labor Force Participation rate (CAR & RAR)

Source: Labor Force Survey 2001-02, 2003-04, 2005-06 & 2006-07

Further, employment is an important socio-economic issue and it affects the lives of both young and old. It has a direct impact on income distribution, poverty and economic development. There is a strong correlation between the employment and the incidence of poverty as recession leads to increase in unemployment that then causes an increase in poverty. Provision of ordinary employment is not a proper solution of these problems because it destabilizes the economy. In case of underemployment, work force becomes the burden on the economy and better working environment with increased vocational competence and wages becomes essential to increase the productivity (Veracierto, 2008).

There are many inherent problems linked to employment and labor markets in Pakistan such as education level and skills of labor. The accelerated economic progress and growth require changes in work process by improved technology that is not possible without highly skilled labor. A major part of its population is young people, which require special training programs and employment opportunities. Women are not considered significantly in labor force because they are counted in domestic management. The literacy rate of women is also very low as compared to that of men. Further the female labor force is not skilled, their wage rate is very low and they also face several other social barriers in the labor market. (Shah, 1986; Rashed, Lodhi & Chishti, 1989; Kozel & Alderman, 1990; Hafeez & Ahmad, 2002; Azid et al., 2001; Faridi et al., 2009).

The present study is devoted to examine the factors that affect the labor force participation. The main purpose of present study is to explore the demographic factors that directly or indirectly influence the labor force participation and to check the effects of the different geographical location factors i.e. provincial location and residential period on the labor force participation rate and to estimate the socioeconomic potential shifters i.e. relationship to head of household and job training that are affecting the labor force participation rate.

Age is a very important issue in the labor market. In Pakistan, a worker having the age of 10 years and above comprises the labor force. Young people are economically more active because of their good health but still their education and skills are most important for better production. Their returns on investment like training and education is also higher because it increases their working efficiency more quickly as compared to the old age. The availability of suitable jobs has also been an important issue in Pakistan from the last few decades.

The labor force participation studies in the developing countries have tried to translate the general propositions of labor force participation in the developed countries into models for empirical work. Attempts have been made to find measurable variables that affects determinants of labor force participation by looking at a combination of personal characteristics such as, age, marital status, education, presence of children, household size, wage, income, migration status, health and household characteristics such as relationship to head, husband's occupation, husband's income, husband's employment status-for married women; and the labor market microeconomic variables such as, the level of unemployment, level of urbanization, type of employment, agricultural employment, proportion of children enrolled in school (Standing & Sheehan, 1978; Magidu 2010).

The technological progress in agricultural sectors will replace the labor force from the agricultural sector because

the use of machinery will increase the productivity and replace the labor force, and the problem is that we have this labor force in bulks. The technological advancement decreases the labor force participation in agriculture sector (Johnston & Cownie, 1969; Jarvis & Vera-Toscano, 2004).

Faridi and Basit (2011) revealed that the rural development is the core of economic development of a country, which is obtained by providing employment opportunities to the labor force in rural areas. The binomial logit model was applied in their study and they concluded that education, social capital index and the economic capital index have direct impact on rural labor supply. The findings of the study focused on improvement in educational facilities and improved rural infrastructure. Lee et al., (2008) examined the relationship between marital status and female labor force participation. Low labor force participation among married females was explained by demand-side factors, while high labor force participation among middle-aged women was accounted for supply-side factors. The study also addressed the potential endogeneity between a female's decisions concerning marriage and participation in the labor market. Instrumental variables such as sex ratio (the number of males aged 15 to 39 as a percentage of females from the same age cohort) and unemployment rate among people under 30 years of age were used to overcome the problem. Khan et al., (2007) identified a negative correlation between the farm size, off farm employment, size of livestock herd and education level and positive correlation between the size of family, village distance from the main road and employment. According to Karunagoda (2004) rise in wage rates of workers in agriculture sector resulted in increased unemployment levels in the country. The real prices of agricultural outputs decreased with decreasing trend. Expansion of non-agricultural sector affected the real wages of domestic agriculture in the post reform period. Hafeez and Ahmad (2002) by employing Logit and Probit model identified the effect of women age, household income, education of husband and wife, family size and asset ownership and household structure on labor force participation and found that females' age and education were strongly affecting determinants. Household size also had very strong positive correlation within the female labor force participation. Vélez & Winter (1992) identified the reasons of increase in labor force participation by applying probit model and concluded that various factors like level of education, age, household size and the status of head of household level of education were major factors involved in increasing labor force participation.

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

Bbaale and Mpuga (2011), Sajid, et al. (2011) showed the influence of female's education on labor force contribution by using the multinomial logit model. Education of female, wealth status, religion, region, location, parent's education, husband's education, marital status and number of children were used as independent variables. It was found that education made the women to participate in the wage employment and abridged the ratio of females who worked at home. Women from urban areas selected wage employment while woman from rural areas selected self-employment or they worked at home It concluded that female's education puts significant impact of being engaged in wage employment or in participation and it helped in removing segregation and poverty reduction. Nazli and hameed (2004) established the association between experiences, occupation and education. She found that owing to the pitiable performance of the educational sector the labor force of Pakistan remained unskilled and low productive; hence their earning remained lower. Naqvi and Shahnaz (2002) identified that female's economic participation was significantly influenced by factors such as age, level of education, and marital status. Ibraz (1993) focused on rural Pakistan, and observed that various cultural practices, such as purdah, constrain females from active participation in the labor force.

2. Materials and Methods

2.1 Data

The micro-level data of the Labor Force Survey (LFS) 2008-09 conducted by the Federal Bureau of Statistics (FBS) Government of Pakistan since 1963 will be used in this research. Federal Bureau of Statistic (FBS) collects this data with the help of a questionnaire by interview method. The important information about 36,400 households from four provinces of Pakistan with the help of 34 Field/Regional Offices located all over has been covered in this survey. Two-stage sample design is applied in this survey. FBS has its own sampling plan in which each city/town is divided into different blocks and each block contains 200 or 250 households. The area was divided into urban domain, remaining urban areas and rural domain including low, middle and high-income groups. The population has the Primary Sampling Units of 2576 out of which 1204 are from urban and 1372 are from rural areas.

2.2 Specification of the Model

In order to test the hypothesis binary logit model was used. A general description of the variables is given below.

Dependent Variable: The Labor Force Participation (LFP) is a dummy variable two-way choice model: 0=Unemployed and 1=Employed. Therefore, LFP is the dependent variable in this study.

Independent Variables: There are three main categories of variable in our model which explains the labor force participation: a) demographic factors: Gender, age, education and marital status b) geographic location factors: Location of Province and Residential Period and socioeconomic factors: Relationship to Head of Household, Training of Job. The general model specified above can be used as a guiding paradigm. Based on the theoretical rationale, the operational model consists of the variables, which are supplied by the data. Various socioeconomic variables are analyzed below. The justification for incorporating these variables in female labor force participation decision model and their expected signs, are discussed below.

It is expected to be positive in Male Labor Force Participation and negative in female labor force participation and overall positive.

$$\text{LFP} = \text{f}\begin{pmatrix}\text{GNDR, MARTS, LOCTNP, RHAD, JTRN,}\\ \text{RESPRD, EDUC1, EDUC2, EDUC3, EDUC4,}\\ \text{EDUC5, AGE1, AGE2, AGE3, AGE4, AGE5}\end{pmatrix} \tag{1}$$

The model is the specification of the basic LFP Logit Model. Where LFP is the labor force participation, the dependent variable and the variables in bracket are explanatory variables.

$$\begin{aligned}\Pr(\text{LFP}=1|\text{X}) = \text{F}(&\beta_0 + \beta_1\text{GNDR} + \beta_2 MARTS + \beta_3\text{LOCTNP} + \beta_4\text{RHAD} +\\ &\beta_5 JTRN + \beta_6 RESPRD + \beta_7 \sum_{j=1}^{5} EDUC_j + \beta_8 \sum_{j=1}^{5} AGEC_j)\end{aligned} \tag{2}$$

GNDR: Gender of the worker

MARTS: Marital Status of the worker

LOCTNP: Location (Provincial)

RHAD: Relationship to Head of Household

JTRN: Job Training of a worker

RESPRD: Residential Period of Household

EDUC: Education Level (Informal, Middle, Matric, Intermediate, Higher Education)

AGEC: Age of Worker (15-64 years)

Details of the variables are summarised in Table 1.

Table 1. List of variables

Variables	Variable description
Labor Force Participation Rate	0= if unemployed 1= if Employed
Socioeconomic Variables	
Relationship to head of household	0=Head of household 1=Other
Job Training	0= No 1=Yes
Geographic Location Factors	
Residential period at current location	1= Since Birth 2= 10 years & Over 3= Less than one year to 9 years
Location (Provinces)	1=Punjab 2=Sindh 3= Khyber Pakhtunkhwa 4 = Baluchistan
Demographic Factors	
Gender	0=if worker is female 1=if worker if male
Marital Status	0=if worker is unmarried 1=if worker is married (married, widow/widower, divorced)
Education	
Informal Education	1=Worker has the informal Education
Middle	2=Worker has the Middle Education
Metric	3=Worker has the Metric Education
Intermediate	4=Worker has Intermediate Education
Higher Education	5=Worker has Higher Education
Age	
15-24 Years	1=worker has the age 15-24 Years
25-34 Years	2=worker has the age 25-34 Years
35-44 Years	3=worker has the age 35-44 Years
45-54 Years	4=worker has the age 45-54 Years
55-64 Years	5=worker has the age 55-64 Years

2.3 Methodology

Binomial Logit Model

The dependent variable in our study is qualitative or dichotomous. It may take only two binary values. 1 if the workers are participating in Labor Force (economic activities) and 0 if they are not working. Such function is called the logistic distribution function and it is estimated by maximum likelihood (ML) techniques. An advantage of this function is that it guarantees that the probability ranges from 0 to 1. The binary logistic model was used to estimate the probability of employed in labour force. The specification of the logistic model is as follows:

$$p_i = E\left(\frac{Y=1}{X_i}\right) \tag{1}$$

Here Y = 1 means that a particular is employed in labour force and X denotes the set of explanatory variables used. Here P_i is the conditional probability that a particular individual was employed. In context of logit model it is

$$P_i = E\left(\frac{Y=1}{X_i}\right) = \frac{1}{1+e^{-(\beta_0+\beta_i X_i)}} \tag{2}$$

Let

$$P_i = \frac{1}{1+e^{-Z_i}} \tag{3}$$

$$P_i = \frac{e^{Z_i}}{1+e^{Z_i}} \tag{4}$$

If P_i gives the probability of employed person then $(1 - P_i)$ will give the probability of not employed in labour force.

$$1-P_i = \frac{1}{1+e^{z_i}} \tag{5}$$

The ratio of employed individuals to not employed is written as

$$\frac{P_i}{1-P_i} = \frac{1+e^{Z_i}}{1+e^{-Z_i}} = e^{Z_i} \tag{6}$$

$P_i / (1 - P_i)$ is called the odd ratio in favour of employed individual. Taking the natural log of the odd ratio we obtain

$$L_i = \ln\left(\frac{p_i}{1-p_i}\right) = Z_i \tag{7}$$

As,

$$Z_i = \beta_0 + \beta_i X_i \tag{8}$$

So we can say that L_i is linear in the parameters and in explanatory variables denoted by X_i. The point of advantage of this model is that here only Li the logit is linearly related with but not the probabilities. (Gujarati, 2004)

Table 2. Household's socioeconomic and demographic factors affecting labour force participation in Pakistan

Independent Variables	β	p value	Odd ratios
Education			
Middle Education = 2	-0.238	0.00	0.788
Metric Education=3	-1.056	0.00	0.348
Intermediate Education = 4	-1.187	0.00	0.305
Higher Education = 5	-0.222	0.00	0.801
Informal Education = 1		Reference category	
Age			
15-24 Years = 1	0.846	0.00	2.331
25-34 Years= 2	0.75	0.00	2.118
35-44 Years =3	0.622	0.00	1.864
45-54 Years= 4	-0.324	0.00	0.723
55-64 Years =5		Reference category	
Location (Provinces)			
Punjab = 1	0.009	0.649	1.009
Sindh = 2	-0.098	0.00	0.907
Khyber Pakhtunkhwa = 3	-0.14	0.00	0.869
Baluchistan = 4		Reference category	
Gender			
Male = 1	3.268	0.00	26.258
Female = 0		Reference category	
Marital Status			
Ever married = 1	0.468	0.00	1.597
Unmarried = 0		Reference category	
Job Training =			
Yes = 1	0.959	0.00	2.61
No = 0		Reference category	
Residential period at current location			
Since Birth = 1	-0.196	0.00	0.822
10 years & Over = 2	-0.376	0.00	0.686
Less than one year to 9 years = 3		Reference category	
Constant	-1.174	0.00	0.309

Table 2 provides the regression coefficients, the statistical significance level and Odds Ratio for each variable category. It is observed that value of standard errors of all variables is less than 2 so there is no problem of multicollinearity in our model.

Education is a very important factor that plays an important role in the human capital formation and consider as the important source of employment. The economic development is not possible without good literacy rate. However, in developing countries like Pakistan, where the literacy rate is not very high most of the workers are engaged in the informal sector. The informal education is taken as the reference category. The workers with education level up to middle are 21% less likely to participate in the labor market as compare to informal education. The workers with education level up to metric, Intermediate and higher education are 65.2%, 69 % and 19% less likely to participate in the labor market respectively. The job training is also positive and highly

significant and it plays a major role in labor force participation. The result shows that workers with job training are 2.61 times more likely to participate in labor market than workers with no job training. This supported theoretically increase leading productivity. The results are justified both theoretically and empirically. The employment level increases with an increase in the education but due to informal sector as reference category results shows negative signs. The findings of the study consistent with previous research that education and training are the main sources of human capital formation that in turn have a positive influence on worker's lifetime earnings and labor force participation (Becker, 1962; Mincer, 1962; Sahn & Alderman, 1988; Hafeez & Ahmad, 2002; Faridi et al., 2010)

Age is a very important factor, which affects the labor force participation. It is expected to show positive results theoretically. The study shows that all age groups are statistically significant at different level of significance. The age group age (15-24) taken as the reference category and the workers of age (25-34) are 2.33 times likely to participate in the labor force. Further the workers of age (35-44 years) and age (34-54 years) are 2.11 and 1.86 times likely to participate in labor force. The result is justified that with increasing age they are more energetic, healthy and their marginal productivity is also very high. But with the old age their marginal productivity decrease because of decrease in energy and health problems due to which the workers of age (55-64 years) are 27.7% less likely to participate in the labor force. The results are justified theoretically and empirically and match with the studies of (Naqvi & Shahnaz, 2002).

The location of worker (Provincial) also affects the labor force partition. The workers living in Sindh, Khyber Pakhtunkhwa, and Baluchistan were 1, 0.90 and 0.86 times less likely to participate in labor force than province Punjab. In Punjab, the literacy rate is relative high as compared to other provinces and the workers also have good job opportunities.

Gender is the most important factor affecting labor force participation especially in developing countries like Pakistan where the female workers do not play any active rule in the labor market. In our study female worker are taken as reference category and the results shows that male workers are 26.25 times more likely to participate in labor market that of females. This is proved by theoretically and empirically. Results were consistent with the studies of (Bibi & Afzal, 2012; Lee et al., 2008). Marital status is another factor that significantly affects the labor force participation rate. Unmarried workers are taken as the reference category and results shows that unmarried workers are 1.597 times likely to participate in labor market rather unmarried workers. This is theoretically true because after marriage the responsibility of workers increases with involving many other factors so their participation increases.

The Residential period is also a very important factor that affects labor force participation. The worker living nears their workplace since birth is taken as the reference category. Further the results shows that workers living near work place from 10 years and above are 0.822 times less likely to participate in the labor market and workers living near work place from 1 year to 9 year are 0.686 times less likely to participate in labor market than since birth. It is theoretically true that workers get more opportunity to engage in work if they are living at a place for the longer period.

3. Conclusions and Policy Implication

The main purpose of present study is to explore the demographic factors that directly or indirectly influence the labor force participation. The study is based on Micro-level data on different socioeconomic and demographic factors, which have a deep effect on the labor force participation in Pakistan. The collected set of information of about 1,43,587 frequencies of 36,400 households was used in this study from the Labor Force Survey of Pakistan 2008-09.The research concluded that that level of education, training, age, location, residential period and being males determines labour force participation positively and significantly. Gender is the most important factor affecting labor force participation especially in developing countries like Pakistan where the female workers do not play any active rule in the labor market. The findings of the study identified that education and training are the main sources of human capital formation that in turn have a positive influence on worker's lifetime earnings and labor force participation

Policy making to face the challenges of the labor market in Pakistan is a very important issue. The MTDF (Medium Term Development Framework) 2005-10, the PRSP II (Poverty Reduction Strategy Paper II) 2007-09, the TVET (Technical and Vocational Education and Training) system, the Labor Force Policy 2002 considered as very encouraging steps. Based on results and discussions the study proposes some policy implications, the labor force should be provided with more training and education opportunities to increase their efficiency and productivity. As a major portion of the labor force has informal education so there is a need to focus on this sector and provide special training to increase their efficiency and productivity.

Female workers should be provided by the equal opportunities as that of male workers in education and training so that their efficiency and productivity is increased to the full potential. It needs to take sufficient measure to remove the inequalities in different sectors of demographic and socioeconomic development.

The Labor Force Survey 2008-09 is used in this study. Although, the Labor Force Survey 2008-09 contains consistent information on Labor Force with extensive data and methodology. However, it is not without drawbacks and has few limitations. The Labor Force Survey 2008-09 does not contain any information about the family structure like number of children below five years of age and number of dependents in a household. This also does not have any information about the Labor's parental background. Information about levels of education is available here but not about the completed years of education due to which many important variables like Age, School is starting Age and Education difficult to be generated.

References

Azid, T., Aslam, M., & Chaudhary, M. O. (2001). Poverty, female labour force participation, and cottage industry: a case study of cloth embroidery in rural Multan. *The Pakistan Development Review*, 1105-1118.

Bbaale, E. D. W. A. R. D., & Mpuga, P. A. U. L. (2011). Female education, labour force participation and choice of the employment type: evidence from Uganda. *International Journal of Economics and Business Modeling, 2*(1), 29-41.

Becker, G. S. (1965). A theory of the allocation of time. *The Economic Journal, 75*(299), 493-517. http://dx.doi.org/10.2307/2228949

Bibi, A., & Afzal, A. (2012). Determinants of married women labor force participation in wah cantt: a descriptive analysis. *Academic Research International, 2*(1), 599-622.

Central Intelligence Agency. (2014). *The World Factbook.* Retrieved February 5, 2016, from https://www.cia.gov/library/publications/the-world-factbook/geos/pk.html

Faridi, M. Z., & Basit, A. B. (2011). Factors Determining Rural Labor Supply: A Micro Analysis. *Pakistan Economic and Social Review, 49*(1), 91-108.

Faridi, M. Z., Chaudhry, I. S., & Anwar, M. (2009). The socio-economic and demographic determinants of women work participation in Pakistan: evidence from Bahawalpur District. *A Research Journal of South Asian Studies, 24*(2), 351-367.

Faridi, M. Z., Malik, S., & Ahmad, I. (2010). Impact of education and health on employment in Pakistan: A case study. *European Journal of Economics, Finance and Administrative Sciences, 18*, 58-68.

Gujarati, D. N. (2004). *Basic Econometrics*. New York. http://dx.doi.org/10.1126/science.1186874

Hafeez, A., & Ahmad, E. (2002). Factors determining the labor force participation decision of educated married women in a district of Punjab. *Pakistan Economic and Social Review, 40*(1), 75-88.

Ibraz, T. S. (1993). The cultural context of women's productive invisibility: A case study of a Pakistani village. *Pakistan Development Review, 32*(1), 101–125.

Jarvis, L., & Vera-Toscano, E. (2004, February). Seasonal Adjustment in a Market for Female Agricultural Workers. *American Journal of Agricultural Economics, 86*(1), 254-266. http://dx.doi.org/10.1111/j.0092-5853.2004.00576.x

Johnston, B. F., & Cownie, J. (1969). The Seed-Fertilizer Revolution and Labor Force Absorption. *The American Economic Review, 59*(4), 569-582.

Khan, D., Bashir, M., & Zulfiqar, M. (2007). Estimation of underemployment in agricultural sector of Peshawar valley. *Sarhad Journal of Agriculture, 23*(4), 1257-1263.

Khandker, S. (1992). Women's Labor Market Participation and Male-Female Wage Differences in Peru. In Case Studies on Women's Employment and Pay in Latin America. World Bank Report, no. 12175, Washington, D.C., 373-395.

Kozel, V., & Alderman, H. (1990). Factors determining work participation and labour supply decisions in Pakistan's urban areas. *The Pakistan Development Review*, 1-17.

Lee, B. S., Jang, S., & Sarkar, J. (2008). Women labor force participation and marriage: The case of Korea. *Journal of Asian Economics, 19*, 138–154. http://dx.doi.org/10.1016/j.asieco.2007.12.012

Magidu, N. (2010, May). Socio-Economic Investigation into the Determinants of Labour Force Participation in Labour Markets: Evidence from Uganda. In *Fifth IZA/World Bank Conference on Employment and*

Development.

Mincer, J. (1962). Labor force participation of married women: A study of labor supply. In H. G. Lowis (Ed.), *Aspects of labor economics.* Princeton, NJ: Princeton University Press.

Mincer, J. (1962). Labor Force Participation of Married Women: A Study of Labor Supply, in Aspects of Labor Economics. Princeton, N.J.: *National Bureau of Economic Research*, Princeton University Press.

Naqvi, Z. F., Shahnaz, L., & Arif, G. M. (2002). How Do Women Decide to Work in Pakistan? *The Pakistan Development Review*, 495-513.

Naud, W., & Serumage-Zake. (2001). An analysis of the determinants of labour force participation and unemployment in South Africa's North west province. *Development Southern Africa, 18*(3). http://dx.doi.org/10.1080/03768350120041929

Nazli, H., & Hamid, S. (2007). Concerns of Food Security, Role of Gender and Intrahousehold Dynamics in Pakistan.

Rashid, S., Lodhi, A., & Chishti, S. (1989). Female labour participation behavior: a case study of Karachi. *The Pakistan Journal of Applied Economics, 8*(2).

Sadaquat, M. B. (2011). Employment situation of women in Pakistan. *International Journal of Social Economics, 38*(2), 98-113. http://dx.doi.org/10.1108/03068291111091981

Sahn, D. E., & Alderman, H. (1988). The effects of human capital on wages, and the determinants of labor supply in a developing country. *Journal of Development Economics, 29*(2), 157-183. http://dx.doi.org/10.1016/0304-3878(88)90033-8

Sajid, M. R., Maqsood, F., Maqsood, S., & Afzal, I. (2011). Determinants of labor force participation of married women: a case study of district Gujrat. *Academic Research International, 1*(3). 254-264

Shah, N. M. (1986). Changes in women's role in Pakistan: Are the volume and pace adequate?, *Pakistan Development Review, 25*(3), 339–363.

Standing, G., & Sheehan, G. (1978). *Labour Force Participation in low-income countries. ILO*. Geneva.

Vélez, E., & winter, C. (1992). Women's Labor Force Participation and Earnings in Colombia. *Case Studies on Women's Employment and Pay in Latin America.* Washington, DC, United States: World Bank.

Veracierto, M. (2008). On the cyclical behavior of employment, unemployment and labor force participation. *Journal of Monetary Economics, 55*(6), 1143–1157. http://doi.org/10.1016/j.jmoneco.2008.07.008

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