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## Factors affecting aggregate work hours of married working couples in Pakistan

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### Abstract

This study identifies various factors, which control the hours of work of currently married couples in Pakistan. The study is conducted on the basis of Pakistan *Labor Force Survey* data 2007-08. The study employed cross tabulation technique to investigate the effect of different factors on combined work hours of couples. The study finds that education has strong positive impact on work hours of couples. Moreover, couples in the families living in urban areas work longer hours than those in rural areas. Among demographic factors, age, and family set up have imperative effect on hours of work of couples.

**Keywords:** Labor supply, currently married couples, work hours, husbands, wives, Pakistan

### Introduction

Labor supply decision is devised as the decision whether to work and how long to work. Labor supply is an important determinant of social and economic development of a country. It has strong bearing on production and distribution of income, and thus helps to reduce poverty. In the past few decades, labor supply and, therefore, the time allocation by individuals and households have been central issues among economists. Almost, 57.2 million of entire population is observed as currently active, termed as labor force in 2010-11 [Government of Pakistan (2011-12)]. Literature focused almost on time allocation to market work in order to generate knowledge on the pattern of household labor force. There is an extensive body of empirical work that explains individual's labor supply decisions that is to work, how intensively, at what wage, and in which sector of the economy.

Normally two types of factors can cause workers to engage in labor market work. The first one is called as push factors such as economic pressure, which can push workers to the labor market. People belonging to the poor families are pushed into the market work due to strict financial needs [Kazi and Raza (1991)<sup>[7]</sup>. However, according to the analysis of Benham (1980)<sup>[2]</sup>, and Oreffice (2011), there are various demographic factors like age, number of children and family set-up, which leads individuals to work in labor market. The second kind of factors is termed as pull factors like education and experience, which can pull workers to the labor market. Human capital investment in the form of education improve productivity level of workers, and hence leads to more labor earnings [Mincer (1974)<sup>[10]</sup> and Killingsworth and Heckman (1986)<sup>[8]</sup>. Also,

Neoclassical economists (Becker (1965)<sup>[1]</sup> and Mincer (1980)<sup>[11]</sup> consider education as one of the basic determinants of the labor market work. Verbakel *et al.* (2008)<sup>[12]</sup> and Masken and Stinson (2010)<sup>[9]</sup> found that education has powerful relationship with market work of couples. Chenevert (2011)<sup>[3]</sup> how relative education level affect labor market work within marriage. The study found that when wives have higher education level relative to their husbands, they are more likely to participate in labor market. Furthermore, wives with higher education work more hours in the labor market than the wives who have acquired less or similar education as their husbands.

### Data

The data is obtained on Pakistan Labor Force Survey (LFS) 2007-08 which is a nation-wide survey conducted by Federal Bureau of Statistics. This survey provides vast information on various aspects of the civilian labor force of the country. The *LFS* of Pakistan collects data both at individual and at household levels using a multipurpose household questionnaire. The *LFS* covers all urban and rural areas of the four provinces of the country defined as such by 1998 *Population Census*. However, it excludes

### Methodology

#### Characteristics of Husbands and Wives Influencing Couples' Labor Supply

In this section the study describes the relationships of various characteristics of husbands and

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wives like average age of husbands and wives, husbands' education, family set up and residential province with hours of work supplied by couples to the labor market. Wald test is employed to check the difference between rural and urban areas and found that region-wise difference exist in the country. Where  $\chi^2(38) = 1358.71$  Prob >  $\chi^2 = 0.0000$ .

This paper analyzes the aggregate hours of market work of husbands and their wives (aged 15 years and above) in relation to the different economic and demographic factors in Pakistan. Only few studies have analyzed total market hours allocated by couples at international level. However, no study is conducted on this issue in Pakistan at yet. The study is based on Pakistan Labor Force Survey (2007-08). The study undertakes the cross tabulation technique to analyse the hours of work of couple.

Federally Administered Tribal Areas (FATA) and military restricted areas.

This study focus on currently married husbands and their wives of 15-64 years of age and are currently living together in four provinces of Pakistan. the sample size comprises of 2870 households in urban areas and 4677 households in rural areas. The study excludes the households where one member of couples is missing or a male head has more than one wife or wife is the head of household. The study also excludes the observations where missed information of households is found.

Therefore, the study conducts separate analysis for urban and rural areas.

Table 1 reveals the distribution of the combined labor supply of couples by average age of husbands and wives.

The table shows that the couples comprising of older husbands and wives work longer hours in the labor market as compared to those comprising of younger ones. This is so because both husbands and wives gain more experience and the required skills as they grow older. Therefore, they may have higher opportunities to earn reasonable wages. Besides, younger women have lower probability to work longer hours during high

**Table 1:** Distribution of Couples' Combined Labor Supply by Average Age of Husbands and Wives

(All numbers are percentages from row totals)

Age	Couples' combined working hours per week			
	Up to 50	51 to 75	76 to 100	Above 100
<b>Urban Sample</b>				
Up to 20 years	59.091	18.182	13.637	9.091
21-30 years	18.272	21.595	33.555	26.578
31-40 years	6.839	23.556	36.170	33.435
41-5 years	2.825	19.774	44.633	32.768
51-60 year	1.389	13.194	40.972	44.444
60-64 years	0.510	25.5102	33.163	40.816
Total	7.003	19.512	38.641	34.843
<b>Rural Sample</b>				
up to 20 years	36.364	36.364	18.182	9.091
21-30 years	25.673	24.450	31.051	18.826
31-40 years	5.823	33.415	38.688	22.072
41-50 years	6.023	31.961	40.504	21.512
51-60 years	8.691	31.903	35.204	24.202
60-64 years	13.793	34.483	41.379	10.345
Total	8.691	31.835	37.886	21.872

**Note:** The table is based on statistics taken from *Pakistan Labor Force Survey, 2007-08*. Pearson  $\chi^2(36) = 123.4462$  Pr = 0.000

child bearing age. Therefore, they first prefer to complete their family size before they decide to enter the labor market for longer hours

Table 2 reveals the distribution of couples' labor supply by husbands' education level. The table shows that the couples comprising of husbands having higher education supply more labor than those comprising of relatively less educated husbands in both the urban and rural areas. This could mean that increase in husbands' education level is likely to increase husbands' access to better working and earning opportunities. The effect of husband's education on couple's work hours is greater in urban areas as compared to rural areas.

**Table 2:** Distribution of Couples' Combined Labor Supply by Husbands' Education Level

(All numbers are percentages from row totals)

Husband's Education	Couples' combined working hours per week			
	Up to 50	51 to 75	76 to 100	Above 100
<b>Urban Sample</b>				
No Formal Education (0-4 class)	32.209	14.981	28.464	24.345
Primary (5-9 class)	9.434	21.045	33.237	36.284
Secondary Level (10-11 class)	2.407	19.945	40.509	37.139
College and higher (12 and above class)	3.261	18.478	46.739	31.522
Total	7.003	19.512	38.641	34.843
<b>Rural Sample</b>				
No Formal Education (0-4 class)	28.419	28.064	26.643	16.874
Primary (5-9 class)	21.305	35.509	28.791	14.395
Secondary Level (10-11 class)	4.641	29.114	41.034	25.211
College and higher (12 and above class)	1.821	35.094	40.984	22.101
Total	8.691	31.835	37.886	21.872

**Note:** The table is based on statistics taken from *Pakistan Labor Force Survey, 2007-08*. Pearson  $\chi^2(36) = 445.1572$ .

Table 3 reveals the distribution of couples' labor supply by family type. Combined labor supply of couples is relatively higher in joint families than that in the nuclear families both in urban as well as in rural

**Table 3:** Distribution of Couples' Combined Labor Supply by Family Type

(All numbers are percentages from row totals)

Family Type	Couples' combined working hours per week			
	Up to 50	51 to 75	76 to 100	Above 100
<b>Urban Sample</b>				
Joint	3.116	10.186	45.069	41.628
Nuclear	18.611	47.361	19.444	14.583
Total	7.003	19.512	38.641	34.843
<b>Rural Sample</b>				
Joint	3.207	31.260	38.873	26.660
Nuclear	18.831	32.98	35.909	12.273
Total	8.407	31.839	37.886	21.872

**Note:** The table is based on statistics taken from *Pakistan Labor Force Survey, 2007-08*. Pearson  $\chi^2(36) = 46.8904$  Pr = 0.026.

The distribution of couples' labor supply by residential province is presented in Table 4. The table shows that couples belonging to

areas of Pakistan. Since it is expected that joint families are relatively larger, they require more financial resources to fulfill their financial expenditures. An important explanation could be that in joint families working persons can allocate more time to work because with larger family size it is more convenient to adopt specification, whereby working persons are able to devote maximum time to work, while other family members take care of home activities. It is observed that couples in urban joint families work for longer hours than those in nuclear joint families.

**Table 4:** Distribution of Couples' Combined Labor Supply by Residential Province

(All numbers are percentages from row totals)

Province	Couples' combined working hours per week			
	Up to 50	51 to 75	76 to 100	Above 100
Urban Sample				
Punjab	4.063	15.688	40.875	39.375
Sindh	6.947	23.053	41.053	28.947
KPK	20	28	24	28
Balochistan	23.077	28.205	17.949	30.769
Total	7.003	19.512	38.641	34.843
Rural Sample				
Punjab	4.222	29.822	41.156	24.8
Sindh	8.976	37.101	34.575	19.348
KPK	18.272	28.148	33.827	19.753
Balochistan	18.085	27.659	36.170	18.085
Total	8.407	31.835	37.886	21.872

**Note:** The table is based on statistics taken from *Pakistan Labor Force Survey, 2007-08*. Pearson  $\chi^2(36) = 103.9793$ .

Punjab and Sindh are more likely to work for longer hours than those belonging to KPK and Balochistan. This is so because better job prospects are present in the larger provinces as compared to the smaller provinces. The couples in urban areas of Punjab and Sindh show higher probabilities to supply longer hours per week than those in rural areas of these provinces. The pattern is much different in KPK and Balochistan where labor supply tends to be higher in rural rather than urban areas.

**JEL classification:** Jel 22

### Conclusion

A number of demographic and socio-economic factors explain variations in labor supply behavior of couples. Labor supply behavior of couples is induced by higher wage rates. Substitution effect of wage increase dominates the income effect. Increase in average wage rate of couples induces them to work for more hours in the labor market. Couples' hours of work increases at diminishing rate with their ages both in urban and rural areas.

Education plays an imperative role in shaping the labor supply performance of couples. Couples with more educated husbands and wives supply more hours in the labor market as compared to couples with less educated ones. However, couples with wives having primary education display almost similar hours per week as the couples with wives having no formal education.

It is observed that professionals and legislators display extra combined labor market hours as compared to ones belonging to other occupations.

Husbands and wives living in larger households work for more combined hours than those in smaller households. The

joint family set up exploits economies of scale through division of labor and facilitate more productive household couples to work longer hours as compared to nuclear family set up. Presence of small (0-5 years old) children negatively affects the labor supply behavior of couples. Combined labor supply of couples is higher in the larger provinces Punjab and Sindh than labor supply of those in Khyber Pakhtunkhwa. Labor supply pattern of couples is found to be more or less similar in smaller provinces.

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