Time Poverty, Work Status and Gender: The Case of Pakistan

Najam-us-Saqib and G. M. Arif

The present study measures time poverty and its incidence across gender, occupational groups, industries, regions, and income levels using Time Use Survey (TUS) 2007, the first nationwide time use survey for Pakistan. In the entire TUS sample, the incidence of time poverty is 14 percent. Women are found to be more time poor than men whether employed or not. This is because of certain women-specific activities that they have to perform irrespective of their employment status. Working women are far more time poor than those not working.. Women accepting a job have to make a major trade-off between time poverty and monetary poverty. People working in professions and industries that generally require extended work hours and offer low wage rates are more time poor. This entails a situation of double jeopardy for workers who tend to be money and time poor at the same time. The close association of time poverty with low income found in this study corroborates this conclusion. Government can help reduce time poverty by enforcing minimum wage laws and mandatory ceiling on work hours in industries with high concentration of time poverty. Eradication of monetary poverty can also eliminate the need to work long hours at low wages just to survive. A fair distribution of responsibilities between men and women.is also needed.

Keywords: Time Poverty, Gender Disparities, Time Use, SNA Activities, Time Use Survey, Pakistan

1. INTRODUCTION

Time is a valuable economic resource. It may be spent in a variety of ways, but employed persons spend a significant portion of it in the labour market for monetary gains. They still have other demands on their time resource such as self-care, home production of goods and services and leisure. These demands on time may reach a point where people may be categorised as time poor. In many developing countries including Pakistan, working women may be more time poor than men because of their household responsibilities. Time poverty may also be related to certain occupations and industries where workers have to work longer hours.

The concept of time poverty is not new to economics literature, though the revival of interest in this phenomenon and efforts to measure it empirically are relatively a recent development. Part of the reason for this renewed interest appears to be the availability of

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time use data for a number of countries. The publication of the report on Time Use Survey 2007 (TUS) has added Pakistan to the list of such countries [Pakistan (2009)]. Naturally, the availability of this data has rekindled interest in time use research in Pakistan. The compilation of this dataset has for the first time opened unlimited vistas for research on time use in Pakistan.

The present study focuses on analysis of the various aspects of time poverty among the employed though, for comparison, it has included the not-working sample as well. The study begins by exploring the analytical framework used to study time poverty in the next section. In Section 3, it describes the dataset and discusses its descriptive statistics. This section also delineates the methodology used in this study and deals with the question of how to empirically estimate time poverty. Section 4 presents the results of the present study. The final section summarises the main findings of this study and in conclusion presents some policy recommendations.

2. ANALYTICAL FRAMEWORK

Defining time poverty is not a straightforward exercise. It is a complex matter that involves a number of theoretical and empirical considerations. Once these issues are clarified, we can move on to the main focus of our study. The incidence of time poverty among the employed itself has multiple dimensions that need to be investigated. Though Vickery's (1977) seminal paper on time poverty is regarded as a major step towards analytically expounding the concept, the antecedents of his work can be found in the classical paper by Becker (1965) who developed a framework that treated time as a household resource that is used as an input in the production of household goods and services.[1] However, it may be recalled that time was recognised by economists as a constrained resource long before Becker's work.

To understand the concept of time poverty, it would be instructive to begin by looking at the resources that can be used to enhance the welfare of a household or an individual. As shown in Figure 1, these resources can be divided into three broad categories, namely, physical capital, human capital and time.

Fig. 1. Household Resources and Their Use

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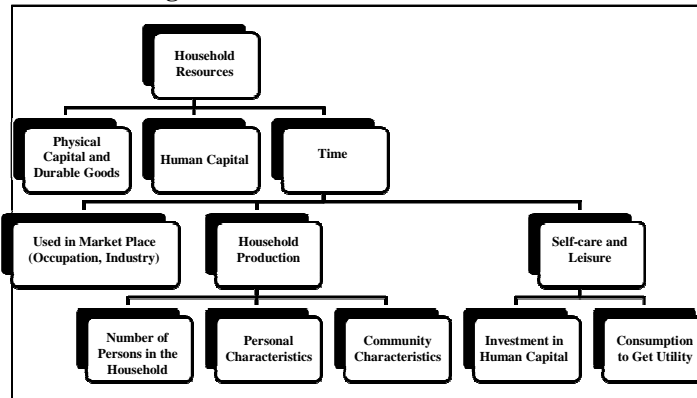
[1]For a more detailed analysis of the economics of time use, see Hamermesh and Pfann (2005).

The role of physical capital is well known. It generates a stream of revenue over its lifetime that adds to household income. Becker (1975) and Mincer (1974) have highlighted parallels between physical and human capital. According to their theory, investment in human capital also generates a stream of income over the lifetime of the individual. Therefore its role in enhancing the welfare of an individual has marked similarities with that of physical capital and can be easily understood by drawing parallels between the two types of capital.

As noted earlier, time is also an important household resource that can be put to a variety of uses. Since Becker's pathbreaking work, the role of time as an input in household production has been well-recognised. The literature on household production postulates that households combine market goods, time, personal and household characteristics along with other inputs to produce household goods and services.[2] Oates (1977) and Hamilton (1983) have extended this approach by showing that community characteristics must also be included as inputs in the household production function. This implies that if there is complementarity between time and other inputs, i.e. if time can be used more efficiently in the presence of the above mentioned inputs in the household production function, then time poverty will also depend on these variables.

Time can be used in self-care and leisure as well. Self-care and leisure may be regarded as utility enhancing consumption activities, but their role in improving human capital cannot be ignored. Spending time in rest, leisure and taking care of oneself makes one more productive. Equally, time spent in productive activities can be used to make leisure more productive because it generates income that can be spent on goods that are complementary to leisure, such as books and television.

In addition, time can be used in the market place to directly generate income. The income thus generated has a direct role with respect to monetary poverty. More interesting for us is the fact that employment increases the time used in committed activities which has strong bearing on time poverty. This raises the spectre of the trade-off between monetary poverty and time poverty. One more layer of complexity is added when we recognise the direct substitutability between time and money. This is evident from the simple fact that time can be bought by hiring the services of other persons or by purchasing time saving devices.

The gender dimension of this issue is important as well. In developing countries, for example, tradition assigns certain activities such as cooking and childcare solely or primarily to women, so that they have to perform these activities even if demand on their time increases as they enter the labour market. If we keep this possibility in mind, the answer to the question whether getting a job makes women better off no longer remains a clear cut yes because now the trade-off between time and monetary poverty as well as personal and social preferences comes into play.

Economists have long recognised poverty as a multifaceted phenomenon, though income based measures of poverty are more commonly known. The United Nations Development Programme and Oxford Poverty Development Initiative have recently formalised the concept of multidimensional poverty into a new poverty index called Multidimensional Poverty Index (MPI).[3] This index takes into account ten measures of deprivation related to health, education and living standards but ignores time poverty,

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[2]For an excellent review of literature on home production, see Gronau (1999).

[3]For more detail, see UNDP (2010) and Alkire and Santos (2010).

which is an important dimension of overall poverty. However, overlooking time poverty may lead to an incomplete measurement of overall poverty as it may result in a number of highly deprived people being classified as non-poor. It may also hamper a true understanding of the extent of deprivation of those who are both time poor and income poor.

The above discussion can be summarised into the following points:

- Time poverty is an important aspect of overall poverty because monetary poverty line provides only a partial measure of poverty.
- It is theoretically possible that some persons could be monetarily rich but time poor and vice versa.
- There are theoretical grounds to believe that both the household and community variables are important determinants of time poverty.
- The gender dimension of time poverty is important, especially for developing countries.

3. DATA AND METHODOLOGY

3.1. The Dataset

This study is based on the Time Use Survey (TUS) 2007 sponsored by the Strengthening PRS Monitoring Project of the Ministry of Finance and conducted by the Federal Bureau of Statistics, Government of Pakistan [Pakistan (2009)]. This is the first nationwide time use survey for Pakistan. The survey was conducted from January to December 2007 and covered a cross-section of 19,600 households. It represents both national and provincial levels with rural/urban breakdown. The year-round coverage of the survey was designed to capture seasonal variation in the time use pattern.

While the survey provides useful information about the household and the community, the prized section of the survey is the diary that records all the activities of two selected persons from each household who are ten years of age or older.[4] The activities are recorded over a period of 24 hours. The entire day is divided into 48 half-an-hour slots and each person is asked about the activities he/she was engaged in during each half hour. An elaborate coding scheme is used to classify the activities reported by the respondents. It is the first time that such a detailed account of time used in daily activities has been made available for Pakistan. Some important details of how this data was used in this study and some of its salient characteristics are described below.

The individuals aged 10 years and above, who filled the diary to report their activities during the past 24 hours, form the unit of analysis for this study. These individuals are grouped into two broad categories, working or employed and not-working or not employed. The subsample of 'employed' persons consists of those who have worked for income or profit at least for one hour during the week preceding the survey. This definition is consistent with that used by the Pakistan Bureau of Statistics (PBS). The 'not-working' or 'not employed' subsample is the residual category consisting of both the unemployed and those who are out of the labour force. This type of categorisation has recently been used by Kalenkoski, Hamrick and Andrews (2011) to determine the time poverty thresholds based on pooled data from 2003-2006 American Time Use Surveys (ATUS).

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[4]For details of the procedure used to select two individuals from each household, see, Pakistan (2009).

3.2. Sample Characteristics

Since the major objective of this study is the analysis of time poverty of the employed sample by gender and other characteristics related to labour market, it would be instructive to have a brief description of these characteristics. Table 1 shows the socio-demographic characteristics of the total sample as well as for the working and not-working sub-samples separately, while the labour market specific indicators of the employed sample are reported in Table 2, where the relevant figures from Pakistan Labour Force Survey [Pakistan (2010)] have been provided for comparison. Information on monthly income and sources of income is given in Table 3.

Fifty two percent of the total respondents who filled the diary are females. The mean age for the total sample is 31 years and the male sample is on average one year older than the female sample. About 40 percent of the sample is drawn from urban areas and more than half were married at the time of the survey. There is a gender difference in terms of the proportion living in urban areas and the marital status, but it is relatively small (Table 1).

Table 1

Sample Characteristics

Sample	Total Sample			Not-working/Not Employed			Employed		
	Both Sexes	Male	Female	Both Sexes	Male	Female	Both Sexes	Male	Female
% Female	–	–	51.6	–	–	74.3	–	–	20.5
Mean Age (Years)	30.9	31.4	30.4	28.4	23.7	30.1	34.3	34.9	32.0
% Urban	39.4	40.5	38.4	42.2	45.2	41.1	35.7	38.4	25.0
% Rural	60.6	59.5	61.6	57.8	54.8	58.9	64.3	61.6	75.0
Marital Status									
Currently Married	56.6	53.4	59.7	41.7	16.8	58.3	68.9	69.6	66.5
Unmarried	39.2	44.1	34.5	47.2	79.8	35.9	28.2	28.3	27.6
Others	4.2	2.5	5.7	5.1	3.4	5.7	2.9	2.1	5.0
All	100	100	100	100	100	100	100	100	100
(N)	(37832)	(18321)	(19511)	(21871)	(5630)	16241)	(15961)	(12691)	(3270)

Source: Calculated from the micro-data of Time Use Survey, 2007.

Figure 2 shows the percentage of males and females working at the time of the survey. Whereas more than two-thirds of the males were found working at the time of the survey, the corresponding figure for the females was only 17 percent. Consequently, while three-quarters of the not-employed sample consists of females, their proportion among the employed sample is only one-fifth (Table 1).

Another noteworthy gender difference among the not-working persons is in their marital status. Table 1 shows that approximately 60 percent of the not-working females are in the 'currently married' category as compared to only 17 percent for the males. This gap is much narrower and in opposite direction among the employed persons, the two figures being 67 percent and 70 percent for women and men respectively. The overwhelming majority of the employed females (about 75 percent) live in rural areas, while this figure for the not-working women is about 60 percent.

Fig. 2. Percentage of Males and Females Working at the Time of the Survey
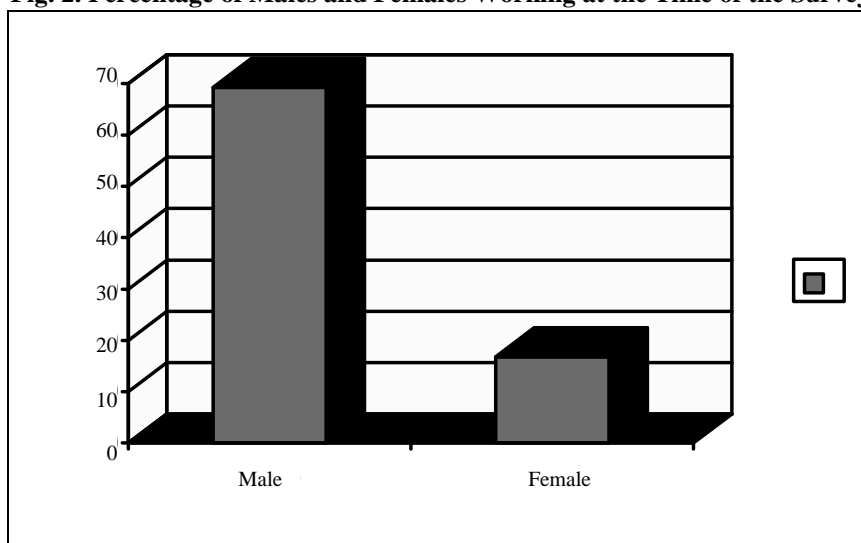
Source: Calculated from the micro-data of Time Use Survey, 2007.

One of the reasons for the higher percentage of working women living in rural areas appears to be their substantially higher representation among agricultural workers (48 percent as compared to 29 percent men; Table 2). Within the employed sample, the majority of females fall in three occupation groups—agriculture workers (48 percent), craft workers (19 percent), and unskilled (elementary) workers (18 percent). Only 15 percent women are professional or associate professional workers. Employed males are engaged in four major occupational categories: agriculture (29 percent) professionals and associate professionals (24 percent), elementary work (21 percent) and, craft and machine work (18 percent). In terms of industrial classification, women are concentrated in agriculture, manufacturing and, community and social service sectors. In addition to these three sectors, the employed males have a substantial representation in the trade sector as well (Table 2).

Table 2 also shows that employment status of 46 percent of the employed males is reported as 'employee', while the corresponding figure for women is 39 percent. The most pronounced gender difference in employment status is found in the 'unpaid family helper' and 'self-employed' categories. Compared to just 10 percent of the males, around half (47 percent) of the females are unpaid family workers. On the other hand, 39 percent of males are self-employed as compared to only 14 percent of females.

Three labour market characteristics of the TUS employed sample are also compared in Table 2 with the LFS employed sample. While most of the TUS and LFS figures are fairly close to each other, there are three noteworthy differences between these datasets. One, LFS shows a higher representation of females among agriculture workers as compared to TUS while in case of female craft workers and machine operators' TUS figures are larger. Two, among industries, LFS reports a higher percentage of women in agriculture as compared to TUS data, whereas TUS figures are higher for women working in the manufacturing sector. Three, the percentage of unpaid family helpers in

Table 2

Labour Market Characteristics of the Employed Sample

Labour Market Characteristics (Percentages)	Working/Employed Sample					
	Both Sexes		Male		Female	
	TUS[*]	LFS[**]	TUS[*]	LFS[**]	TUS[*]	LFS[**]
Occupation						
Professionals	15.4	14.2	18.4	17.1	3.8	2.6
Associate Professional	6.6	5.3	5.5	5.0	10.9	6.6
Clerks	1.5	1.6	1.8	2.0	0.3	0.2
Service and Workshop	5.2	4.9	6.4	6.0	0.8	0.6
Agricultural Worker	33.0	37.4	29.3	31.3	47.5	60.9
Craft Workers	14.2	15.2	13.0	16.1	19.1	11.8
Machine Operators	4.0	4.0	5.1	5.0	9.1	0.2
Elementary (Unskilled) Occupation[a]	20.0	17.4	20.7	17.5	17.5	17.1
Industry						
Agriculture	39.7	44.6	35.3	36.9	57.0	75.0
Manufacturing	12.8	13.0	10.8	13.3	20.3	11.8
Electricity	0.8		1.0		0.1	
Construction	6.9	6.3	8.7	7.8	0.2	0.4
Trade	14.8	14.6	19.1	17.9	2.2	1.8
Transport	5.1	5.5	6.4	6.8	0.3	0.2
Finance	1.8		2.2		0.3	
Community and Social Services	17.6	15.7	17.1	14.4	19.5	10.6
Undefined	0.3	2.3	0.4	2.9	0.1	0.2
Employment Status						
Employees	44.2	36.0	45.7	36.0	38.5	22.2
Self-employed	34.0	34.2	39.2	39.6	13.7	12.8
Unpaid Family Helpers	17.9	28.9	10.4	19.7	47.2	65.0
Employers	3.9	0.9	4.8	1.2	0.6	–
(N)	(15961)	–	(12691)	–	(3270)	–

Source: *TUS: Calculated from the micro-data of Time Use Survey, 2007.

     **LFS: Figures for fiscal year 2007-08 taken from Pakistan Labour Force Survey 2008-09.

     a: Elementary occupation includes unskilled workers such as street vendors, cleaners, domestic helpers, and labourers in construction, agriculture, and mining sector.

the TUS is lower than that in the LFS. An important procedural difference also exists between the two. The TUS has used female enumerators to report the activities of female respondents, while this task is performed by male enumerators in the LFS. Therefore, it may be argued that the reporting of female activities is more reliable in the TUS.

    The gender difference in employment status reflects itself in the monthly income statistics too (Table 3). More than 43 percent of the employed women reported no monthly income,[5] whereas 45 percent of them were earning a monthly income of Rs 4000 or less. This contrasts sharply with the corresponding figures for the employed males. Among them, the proportion without any monthly income was only 8 percent while approximately 60 percent of them were earning more than Rs 4000 per month. Wages and salaries, and business are the major sources of monthly income for both the employed men and women.

    [5] These women are primarily unpaid family helpers.

Table 3

Distribution of the Employed Sample by Monthly Income and
Sources of Income (Percentages)

Income and Sources of Income	Both Sexes	Male	Female
Upt to Rs 2000	15.1	9.8	35.6
2001-3000	9.4	10.3	5.7
3001-4000	12.5	14.8	3.6
4001-5000	11.3	13.7	2.2
5001-6000	8.6	10.3	2.0
6001-7000	6.3	7.5	1.7
7001-8000	4.7	5.6	1.2
8001-9000	3.2	3.8	0.9
9001-10,000	2.9	3.4	0.9
10,000 or More	9.8	11.6	2.9
Don't Know/Refusal	1.3	1.4	0.8
No Income[a]	14.8	7.7	42.6
Sources of Income			
Wages and Salaries	44.2	45.5	38.8
Business	37.0	43.1	13.1
Transfer Income	3.2	2.7	5.0
Other	0.9	1.0	0.4
No income[a]	14.8	7.7	42.6
All	100	100	100

Source: *TUS: Calculated from the micro-data of Time Use Survey, 2007.
   **LFS: Figures for fiscal year 2007-08 taken from Pakistan Labour Force Survey 2008-09.
   a: These are unpaid family helpers.

The differences in the characteristics of working and not-working women in terms of age and schooling are presented in Appendix Table 1. It shows that the share of teenagers (10–14 years old) is greater (17.7 percent) among the not-working women sample as compared to the working sample (7.4 percent). Approximately two-thirds of the working women are in their prime age, that is, 15–39 years, while the corresponding share for the not-working sample is 56 percent. The proportion of aged women among the not-working sample is modestly higher (8.4 percent) than among the working sample (4.9 percent). In terms of education, it is interesting to note that the not-working women sample appears to be more literate than the working women sample. However, the share of degree holders is relatively greater among the working women.

In short, this description of the characteristics of the employed and not-employed sample of the 2007 TUS by rural-urban classification shows a great deal of variation in their demographic profile and economic activities, which are likely to be closely associated with their time use patterns and time poverty.

3.3. Methodology

This study proceeds in two steps. The first step consists of an examination of the time use pattern of the respondents by the type of activities as classified in the TUS 2007. The focus has been on differentials in time use pattern by gender, region, work status, and other

labour market indicators. The TUS 2007 organises activities of the respondents in three broad categories, namely, System of National Accounts (SNA) activities, extended SNA activities, and non-SNA activities. The SNA activities consist of employment for establishments, primary production activities not for establishments, like crop farming, animal husbandry, fishing, forestry, processing and storage, mining and quarrying; secondary activities like construction, manufacturing, and activities like trade, business and services. Extended SNA activities include household maintenance, care for children, the sick and the elderly and community services. The activities related to learning, social and cultural activities, mass media and personal care and self-maintenance constitute Non-SNA activities.

To proceed to the second stage of the study, which deals with various aspects of time poverty as discussed in Section 1, it is inevitable to operationalize the concept of time poverty. What we need is a working definition of time poverty that makes it possible to estimate a time poverty threshold using our dataset. The estimated threshold can then be used to classify people either as time poor or non-poor. This objective can be achieved by using a methodology that is similar to that used for estimating monetary poverty.

The first thing that needs to be decided in this regard is whether to use an absolute or a relative measure of poverty. Both measures are common in the literature on monetary poverty, though the choice of an absolute measure is a bit more arbitrary. Often a certain level of per adult calorie intake equivalent based on "minimal" calorie requirements is taken as the poverty threshold. Unfortunately, things get more difficult in case of time poverty as there is no agreed level of "minimal" time needed by a person to avoid being time poor. Therefore we have to resort to a relative definition of time poverty that involves using some measure of the central tendency (such as mean, median or mode) of time distribution or its multiple as a time poverty cut-off point.[6]

The issue of the choice of a poverty index comes next. We use the headcount index, which gives the proportion of people who are time poor. The results presented using this index are easy to grasp, even by a non-professional. In addition to being simple and straightforward, it belongs to the FGT class of poverty indices that possess certain desirable properties.[7]

Which are the activities that make people time poor if they exceed a predetermined limit is another question that has to be dealt with. While it is easy to exclude activities such as leisure and vacationing from this list, much more thinking is needed to decide on the activities that belong to it. The literature on time use describes these activities in such terms as "necessary or committed activities" and time spent in these activities as "non-free minutes" [Kalenkoski, *et al.* (2007)]. The activities to which an individual has committed as his economic or social responsibility may be regarded as necessary activities and time spent in these activities may be counted as non-free minutes contributing to his/her time poverty [Kalenkoski, *et al.* (2011)]. Thus, the figures of non-free minutes (time spent on committed activities) hence obtained can then be used for defining time poverty threshold(s) and calculating time poverty.

As noted above, the time use survey data organises activities performed by the respondents in three broad categories, namely, SNA, extended SNA, and non-SNA activities. A careful scrutiny of the list of the activities falling under each of the three broad categories, as reported at the beginning of this section, reveals that the first two

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[6]This definition is relative with respect to different time distributions and must not be confused with the measures of relative poverty that take into account the wellbeing of other people in the neighbourhood.

[7]For more detail on FGT indices of poverty, see Foster, Greer and Thorbecke (1984).

categories consist of what we may safely call committed activities. For instance, the major activities included in the SNA, such as employment, production, trade and business activities, are considered 'committed' because these activities are directly related to the livelihood and economic wellbeing of working persons and their households, and they have committed to perform these activities in exchange for monetary or other economic benefits. Similarly, some social responsibilities which are essential for the welfare of household members such as care for children, the sick and the elderly are also categorised as committed activities, as they must be performed as a social obligation. These activities are part of the extended SNA activities. Therefore we add time spent by the respondent in SNA and extended SNA activities to calculate the total time spent by her/him in committed activities. Figure 3 shows the link between the concept and the empirical definition of time poverty as discussed above.

Fig. 3. Towards an Empirical Definition of Time Poverty
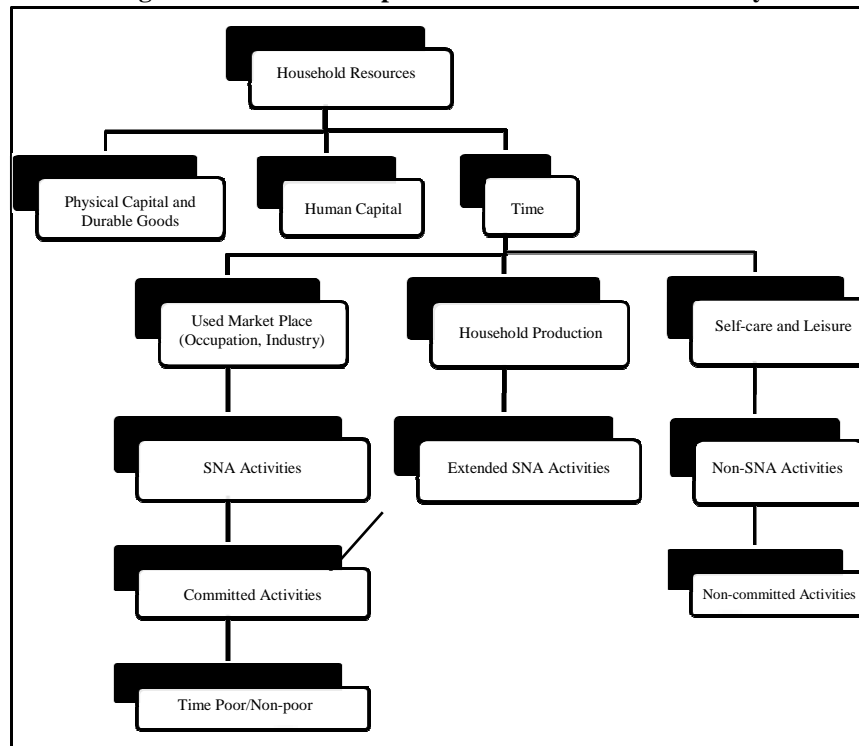
A poverty line or threshold that is used to calculate the headcount index is often defined as a multiple of the median of the non-free time of an individual. In the absence of an agreed cut off point for time poverty based on sound theoretical grounds, the only option left is to follow a threshold level commonly used by previous empirical studies of time poverty. Following Lawson (2007) and Bardasi and Wodon (2006), this study uses 1.5 times the median time spent in SNA and extended SNA activities as the time poverty line. Based on this methodology, the time poverty line is computed as 10.5 hours (630 minutes). The time poor are those who have spent more than 10.5 hours in a day on the

committed activities (SNA+ex-SNA).[8] In other words, persons who work 63 hours in a week are deemed to be time poor.

However, it can be argued that the value of 10.5 hours used in this study as the poverty line is an arbitrary cut-off point. A natural question then would arise that what difference would it make if a higher or a lower cut-off point was chosen as poverty line. In the absence of well-established practices to measure time poverty, alternative poverty lines have commonly been used in the literature [Bardasi and Woden (2006)]. Following this practice, two alternative poverty lines have also been used in the analysis; 9 hours as a lower cut-off point and 12 hours as a higher cut-off point.

4. RESULTS

4.1. Time Use

Table 4 sets out data on the time use patterns for the full sample as well as working and not-working subsamples separately, controlling for gender and rural-urban areas. The male sample that filled the diary spent on average 5 and a half hour a day in SNA activities. In contrast, the female sample spent 5 hours in ex-SNA and only 1 hour and 15 minutes in SNA activities. Men spent about half an hour more in non-SNA activities as compared to women.

Table 4

Mean Time Spent (Hours:Minutes) on Different Activities
by Work Status, Gender and Rural/Urban

Sample	Total Sample			Employed Only			Not-working		
	SNA	Ex.SNA	Non-SNA	SNA	Ex.SNA	Non-SNA	SNA	Ex.SNA	Non-SNA
Total Sample									
All	03:15	02:55	17:50	06:58	01:22	15:40	00:32	03:54	19:34
Male	05:21	00:32	18:07	07:32	00:32	15:56	00:24	00:32	23:04
Female	01:15	05:10	17:35	04:42	04:39	14:39	00:34	05:16	18:10
Rural Areas									
All	03:25	03:03	17:32	06:44	01:34	15:42	00:44	04:16	19:00
Male	05:27	00:31	18:02	07:22	00:32	16:06	00:34	00:29	22:57
Female	01:35	05:21	17:04	04:41	04:52	14:27	00:48	05:27	17:45
Urban Areas									
All	02:58	02:43	18:19	07:22	01:02	15:36	00:14	03:46	20:00
Male	05:13	00:33	18:14	07:49	00:32	15:39	00:13	00:35	23:12
Female	00:44	04:52	18:24	04:44	03:59	15:17	00:16	04:58	18:46

Source: Calculated from the micro-data of Time Use Survey, 2007.

Some more details emerge as we look at the time use statistics separately for the working and the not-working sample. In the not-working sample, both males and females spent an average of around half an hour in SNA activities. The real gender difference is observed in the remaining two categories. On ex-SNA activities, the not-working male sample spent only half an hour as compared to more than 5 hours spent by the not-working females. The not-working men spent about 5 hours more than women in non-SNA activities.

[8]Using same methodology, Bardasi and Wodon (2006) have reported a time poverty line of 70.5 hours per week for Guinean adults (age 15 years and older).

The employed males spent 7 and a half hours in SNA activities while the corresponding time for the female sample was less than 5 hours. On ex-SNA activities, the employed males spent an average of only 32 minutes in 24 hours whereas the female sample used up, on average, 4 hours and 39 minutes of their day on these activities. The gender gap in the employed sample in the time spent in non-SNA activities was substantially smaller as compared to that in the not-working sample.

A comparison of the time use pattern of the working, and not-working samples reveals that employed males spend almost the same small amount of time (32 minutes) in ex-SNA activities in both cases. In contrast, despite having to work around 5 hours a day in the labour market, the women's lot in terms of shouldering the responsibility of ex-SNA activities is not changed substantially after accepting employment. The time spent by them in ex-SNA activities is reduced, on average, from 5 hours and 16 minutes to 4 hours and 39 minutes, a gain of just 37 minutes. This lends credence to the view that some activities in the developing countries are considered to be women specific which they have to perform, whatever else they may or may not be doing.

The overall result is that women end up working more hours than men whether they accept paid work or not. Not-working women spend about 5 more hours in SNA and ex-SNA activities combined as compared to not-working men. This gender gap persists in the working sample, though it is reduced to 1 hour and 16 minutes. Men also have more free time that they spend in non-SNA activities in both the cases though this gender gap is much smaller in the working sample.

While the time used in SNA and ex-SNA activities by the males is almost the same in both rural and urban areas, women living in rural areas spend more time on both the types of activities as compared to those living in urban areas. They also have less time available to them for non-SNA activities as compared to their urban counterparts. This rural-urban divide in the time spent by women in SNA and ex-SNA activities combined on the one hand and non-SNA activities on the other prevails both among working and not-working sample, though the gap is much wider among the working women. A working woman living in the rural area spends, on average, more than double the time in SNA and ex-SNA activities as compared to a woman living in the urban area.

Tables 5–7 show the time use data by three labour market indicators of the employed sample, namely the occupational class, industry and employment status, and gender and rural-urban areas. Service workers and plant/machine operators, who mostly work in the informal sector,[9] spent on average 8 and a half hours in SNA activities, approximately 2 hours more than the time spent in SNA activities by professional and clerical workers. The latter usually work in the formal sector where the number of working hours is fixed, whereas those employed in the informal sector usually work longer hours. This difference persists in rural as well as urban areas. Male workers spent on average more time in SNA activities than their female counterparts in all occupational categories. Moreover, male professional and agricultural workers had relatively more free time than the workers in other occupations.

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[9]The Labour Force Survey defines the informal sector on the basis of the type of enterprise and the number of persons working in the enterprise. The TUS 2007 reveals that the service workers and plant/machine operators are primarily engaged in the informal sector.

Table 5

Mean Time Spent on Activities by the Employed Sample by Their Occupation

	SNA			Ex-SNA			Non-SNA			Male			Female		
Occupation	Rural	Total	Urban	Rural	Total	Urban	Rural	Total	Urban	SNA	Ex-SNA	Non-SNA	SNA	Ex-SNA	Non-SNA
Managers	08:34	08:15	08:04	00:39	00:34	00:32	14:47	15:11	15:24	08:23	00:26	15:11	04:38	04:09	15:13
Professionals	06:23	06:12	06:07	01:06	01:04	01:04	16:31	16:44	16:49	06:27	00:48	16:45	04:31	02:53	16:36
Ass. Professionals	05:26	05:31	05:34	01:47	01:47	01:47	16:47	16:42	16:39	06:08	00:43	17:09	04:38	03:31	15:51
Clerk	06:49	06:56	07:00	00:39	00:41	00:42	16:32	16:23	16:18	06:58	00:35	16:27	04:28	03:02	16:30
Service Workers	08:28	08:28	08:28	00:30	00:35	00:39	15:02	14:57	14:53	08:34	00:29	14:57	05:11	03:42	15:07
Agri-workers	06:03	06:02	05:45	01:56	01:56	01:55	16:01	16:02	16:20	06:45	00:32	16:43	04:21	05:16	14:23
Craft Workers	06:31	06:50	07:09	02:09	01:45	01:21	15:20	15:25	15:30	07:51	00:32	15:37	04:11	04:57	14:52
Plant and Mach- Operator	08:27	08:34	08:42	00:28	00:27	00:26	15:05	14:59	14:52	08:34	00:27	14:59	08:15	02:14	13:31
Elementary Occup.	07:28	07:34	07:44	01:05	01:03	01:00	15:27	15:23	15:16	07:49	00:33	15:38	06:23	03:25	14:12

Source: Calculated from the micro-data of Time Use Survey, 2007.

Table 6

Time Spent by Industry

	Total			Rural			Urban			Male			Female		
Industry	SNA	Ex-SNA	Non-SNA	SNA	Ex-SNA	Non-SNA	SNA	Ex-SNA	Non-SNA	SNA	Ex-SNA	Non-SNA	SNA	Ex-SNA	Non-SNA
Agriculture	06:15	01:49	15:56	06:15	01:50	15:55	06:04	01:43	16:13	06:52	00:30	16:38	04:45	04:59	14:16
Manfu.	06:49	01:55	15:16	06:24	02:28	15:08	07:10	01:26	15:24	08:02	00:31	15:27	04:16	04:50	14:54
Elect. Gas	06:30	00:42	16:48	06:21	00:41	16:57	06:34	00:42	16:44	06:26	00:40	16:54	08:00	03:10	12:50
Constr.	07:44	00:36	15:40	07:44	00:37	15:39	07:44	00:34	15:42	07:45	00:35	15:40	04:41	03:47	15:32
Trade	08:38	00:30	14:52	08:46	00:33	14:41	08:32	00:28	15:00	07:04	00:23	16:33	05:20	04:04	14:36
Transport	08:24	00:36	15:00	08:15	00:38	15:07	08:33	00:33	14:54	08:25	00:34	15:01	06:52	02:40	14:28
Finance	07:28	00:33	15:59	07:26	00:30	16:04	07:29	00:33	15:58	07:26	00:32	16:02	08:37	01:08	14:15
Com. Social. Ser	06:30	01:22	16:08	06:30	01:20	16:10	06:28	01:24	16:08	07:00	00:42	16:18	04:47	03:39	15:34

Source: Calculated from the micro-data of Time Use Survey, 2007.

Table 7

Time Spent (Hours:Minutes) by Employment Status

	Both Sexes			Males			Female		
Employment Status	SNA	Ex. SNA	Non-SNA	SNA	Ex. SNA	Non-SNA	SNA	Ex. SNA	Non-SNA
Employee	07:18	01:11	15:31	07:44	00:33	15:43	05:20	04:04	14:36
Self-employed	07:21	00:52	15:47	07:36	00:33	15:51	04:25	04:27	15:08
Unpaid Family Helper	05:07	02:59	15:54	06:09	00:23	17:28	04:15	05:12	14:33
Employer	08:13	00:31	15:16	08:20	00:25	15:15	04:30	03:27	16:03

Source: Calculated from the micro-data of Time Use Survey, 2007.

In terms of industrial classification, workers engaged in trade, transport and construction sectors spent more time in SNA activities than those working in other sectors. This pattern of time use is not influenced much by gender or region.

Overall, the female unpaid family helpers spent 3 hours more in a day on committed activities than the male unpaid family helpers. The situation of women working as employees or self-employed was not much different. Unpaid family helpers spent less time on committed activities than the other three categories of workers. However, a glance at the gender distribution of time reveals that female unpaid family helpers spent a lot more time in ex-SNA activities than their male counterparts (more

than 5 hours vs. only 23 minutes). This resulted in female unpaid family workers spending more time in committed activities than any of the remaining three groups of workers.

It is worth focusing on women who spent some time in SNA activities (Table 8). On average these women spent more than 3 hours with virtually no difference in rural and urban areas. However, there was significant difference in this regard between the working and not-working women. In urban areas, the former spent an average of 5 and a half hours in SNA activities while the latter used only one hour and 41 minutes. The working rural women spent on average 5 hours in SNA activities as compared to 2 hours and 10 minutes used by the not-working sample. Overall, working women give considerable time to their labour market activities.

It appears from these simple statistics on the time use pattern that in Pakistan (rural and urban areas alike) the participation of women in the labour market does not reduce their time commitment for ex-SNA activities. Males spend little time in ex-SNA activities, which, in Pakistani culture, appear exclusively to be for females. Although women spend much less time than men in SNA activities, their overall time spent on committed activities (SNA+ ex-SNA) is greater than the time spent by their male counterparts in these activities.

Table 8

Time Spent (Hours:Minutes) by Women in SNA Activities

	Urban	Rural	Total
Working	05:29	04:56	05:04
Not-working	01:41	02:10	02:03
Total	03:14	03:16	03:15

Source: Calculated from the micro-data of Time Use Survey, 2007.

4.2. Time Poverty

The time use patterns of both the working and not-working samples are reflected in the time poverty statistics. The last row of the first panel of Table 9 indicates that, based on a 10.5 hours a day poverty line, time poverty is 14 percent for the entire TUS sample. As expected, the employed people (male as well as female) are more time poor than those in the not-working category, mainly because the latter, in general, did not spend time in SNA activities (see discussion in the previous section). This difference is quite large in both urban and rural areas. Time poverty is substantially higher among not-working as well as working women as compared to men in the respective categories. Working women are hugely more time poor as compared to the not-working women (36.8 percent versus 10.2 percent respectively). This raises the question whether getting a job is a bane or bliss for women. The answer depends on the resulting trade off between monetary and time poverty and its valuation by women. Moreover, if time poverty is computed from the time used for the SNA activities only, the incidence of poverty among women is negligible, less than 2 percent.

In urban areas, 12.3 percent people are time poor, while for the rural areas this figure is 15 percent. Time poverty in rural areas is higher among females than males.

The opposite is true for urban areas. Within the employed sample, 22.5 percent people are found time poor, with no major difference between rural and urban areas. However, time poverty among the employed female sample is double the time poverty among the corresponding male sample. The difference in rural areas is around two and a half times. In urban areas, although more females are time poor than males, the difference is just 5 percentage points. As noted earlier, it is due to the fact that female participation in the labour market brings hardly any change in their time allocation for activities related to household maintenance, care of children and the elderly.

The second and third panels of Table 9 present results for two alternative poverty lines; one with a lower cut-off point of 9 hours per day and the other with a higher cut-off point of 12 hours per day. As expected the two poverty lines lead, respectively, to higher and lower estimates of time poverty, though the general pattern of time poverty across various categories remains generally the same. The change in time poverty due to change in cut-off point is substantial, for example, increasing cut-off point to 12 hours per day brings down time poverty levels to almost negligible in most of the categories, while a decrease in the cut-off point to 9 hours per day increases considerably the time poverty of both males and females.

Table 9

% Time Poor by Work Status, Gender and Rural-Urban Areas

	Working/Employed			Not-working/Not-employed			Total Sample		
	Both Sexes	Male	Female	Both Sexes	Male	Female	Both Sexes	Male	Female
Poverty line = 10.5 hours per day									
Urban	23.2	22.4	27.9	5.6	0.5	7.6	12.3	14.9	9.8
Rural	22.2	16.6	39.8	9.2	0.5	12.1	15.0	12.1	17.7
Total	22.5	18.9	36.8	7.7	0.5	10.2	14.0	13.2	14.7
Poverty line = 9.0 hours per day									
Urban	44.7	44.3	46.9	13.2	0.9	18.0	25.2	29.4	21.1
Rural	42.1	36.1	61.2	20.1	1.1	26.2	30.0	26.2	33.4
Total	43.0	39.3	57.6	17.2	1.0	22.8	28.1	27.5	28.7
Poverty line = 12.0 hours per day									
Urban	8.7	8.2	11.5	1.7	0.1	2.3	4.4	5.4	3.3
Rural	8.6	5.7	17.8	2.9	0.1	3.8	5.5	4.1	6.7
Total	8.6	6.7	16.2	2.4	0.1	3.2	5.0	4.6	5.4

Source: Calculated from the micro-data of Time Use Survey, 2007.

It would be interesting to compare the results reported above with the time poverty estimates for some other countries. Bardasi and Wodon (2006) report an overall time poverty rate of 17.6 percent for Guinea, whereas the corresponding figures for men and women are 9.5 percent and 24.2 percent respectively. The overall time poverty rate estimated by Lawson (2007) for Lesotho is 7.9 percent, while 8.3 percent men and 6.8

percent women are reported to be time poor. So, time poverty in Pakistan, based on a 10.5 hours per day cut-off point, is lower than in Guinea but higher than in Lesotho.

In Pakistan, only a few studies have estimated the money-metric poverty incidence across the occupational groups. The general conclusion of these studies is that the level of poverty is higher among unskilled (elementary workers), skilled and service workers than that among other occupational categories.[10] The time poverty data presented in Table 10 show higher incidence of time poverty among services workers, machine operators and workers in elementary occupations than among the clerical, professional and agriculture workers. This implies that unskilled and skilled workers along with the service workers are at the receiving end of both monetary and time poverty.

Table 10

Incidence of Time Poverty (% Poor) by Occupation
(Employed only) and Industry

Occupation/Industry	All Areas			Rural Areas	Urban Areas
	Both	Male	Female		
Occupation					
Manager	27.9	27.8	39.4	32.2	25.5
Professional	12.5	12.8	11.1	14.4	11.7
Associate Professional	12.8	9.4	19.4	12.2	13.1
Clerks	10.0	9.6	20.4	11.3	9.4
Service Worker	33.6	34.1	19.2	33.0	34.1
Agriculture	18.5	9.3	40.5	18.5	19.9
Craft Worker	24.3	20.1	35.3	26.5	22.1
Machine Operator	32.7	32.6	59.9	31.6	34.0
Elementary	23.6	20.6	43.2	24.3	25.2
All	22.5	18.9	36.8	22.2	23.2
Industry					
Agriculture	19.5	10.0	42.3	19.4	21.4
Manufacturing	27.7	22.4	24.9	31.5	23.4
Electricity	13.8	12.6	66.7	18.2	11.6
Construction	17.6	17.5	33.3	17.6	17.5
Trade	32.0	31.9	27.5	34.3	30.6
Transport	32.4	32.3	40.0	32.9	31.8
Finance	16.9	16.7	22.2	12.5	17.7
Services	18.1	16.7	22.9	18.4	17.9
All	22.5	18.9	36.8	22.3	23.2

Source: Calculated from the micro-data of Time Use Survey, 2007.

[10]See Jafri (1999) and Qureshi and Arif (2001).

In the male employed sample, time poverty is less than 10 percent among the associate professionals, clerical workers and agriculture workers, whereas one-third of the service workers and plant/machine operators are time poor. The incidence of time poverty among females is much higher than that among their male counterparts in all categories of occupations except professional and service workers. A noteworthy point is that approximately half of the employed women in elementary, skilled and semi-skilled occupations are time poor. These differences in time poverty across occupations persist in rural as well as urban areas. The case of female agriculture workers is interesting. Table 10 shows that 41 percent of these women are time poor whereas only 9 percent of their male counterparts fall in this category.

Table 10 also shows the data on time poverty across the type of industry where the sampled workers were employed. High incidence of time poverty was observed in trade, transport and manufacturing sectors for both male and female workers. In the agriculture sector, time poverty among women was four times higher than that among men. It corroborates the time poverty data across the occupational categories discussed above.

One important lesson from the analysis of the time poverty data across the occupational and industrial classification is that low paid occupations and sectors get more time of the workers. So these workers are poor in money-metric terms as well as in terms of time use. They work for longer hours and get low wages, insufficient to sustain a decent living standard. Rural women working in the agriculture sector are particularly in a disadvantageous position in terms of time poverty.

The finding that low paid occupations are associated with high incidence of time poverty is further reinforced by the monthly income data. Table 11 shows that, generally, the lower the monthly income the higher the incidence of time poverty. For the employed sample, the incidence of time poverty among those who earn a monthly income of Rs 10,000 or more was 16 percent as compared to 30 percent among those who earn Rs 2000 or less per month, indicating a difference of 14 percentage points between the highest and the lowest income group. This gap was wider among women as compared to men, though much smaller between urban women as compared to rural women. In most of the income groups, women were found to be more time poor than their male counterparts in rural as well as urban areas. This indicates a harder trade-off for women between higher income due to joining labour market and increased time poverty as compared to their male counterparts. The trade-off between supplying additional work hours and time poverty is also harder for working women as compared to working men, but less hard as compared to those women who have to make a decision about joining the labour market.

The gender dimension of time poverty can be understood more clearly from the employment status data than from any other labour market indicators. Figure 4 shows a vast difference between males and females in the incidence of poverty in all three categories of employment status: "employees", "self-employed" and "unpaid family helpers". The time poverty among the female 'unpaid family helpers' is around five-fold the time poverty among their male counterparts. In the case of employees, the gender difference in time poverty is around 10 percentage points, favouring the male. This difference is even greater for the self-employed category. Finally, education was found to reduce the incidence of time poverty, particularly among college and university graduates. In addition, the lowest gender gap in time poverty was found among these graduates (Appendix Table 2).

Table 11

% Time Poor by Income Per Month (Rs)

Income Per Month	Total			Rural			Urban		
	Both Sexes	Male	Female	Both Sexes	Male	Female	Both Sexes	Male	Female
Upto 2000	29.8	16.5	39.7	29.2	15.3	44.3	24.2	19.7	28.7
2001–3000	23.6	21.7	36.9	21.5	19.2	43.6	28.6	28.5	29.1
3001–4000	22.8	22.1	33.9	21.2	20.4	35.7	26.3	25.9	31.3
4001–5000	23.2	22.6	37.0	20.9	20.2	46.4	27.4	27.1	31.1
5001–6000	21.5	21.7	17.2	19.3	19.1	23.1	24.5	25.3	13.2
6001–7000	29.4	20.2	24.1	19.8	19.8	20.7	21.4	20.9	28.0
7001–8000	17.7	16.9	32.5	13.4	12.3	35.0	22.4	22.0	30.0
8001–9000	16.6	16.2	23.3	13.6	12.5	31.3	20.0	20.3	14.3
9001–10000	17.8	17.9	16.7	13.6	13.6	12.5	21.9	22.3	16.2
10001 or more	15.8	15.3	24.0	12.9	11.0	30.4	17.3	17.0	21.9
Don't Know	22.1	19.8	45.5	14.8	12.7	33.3	38.5	35.1	199
Refused	22.7	24.2	11.1	17.3	17.0	20.0	34.8	42.1	0

Source: Calculated from the micro-data of Time Use Survey, 2007.

Note: 18 percent of the employed sample has no monthly income.

Fig. 4. % Time Poor by Employment Status
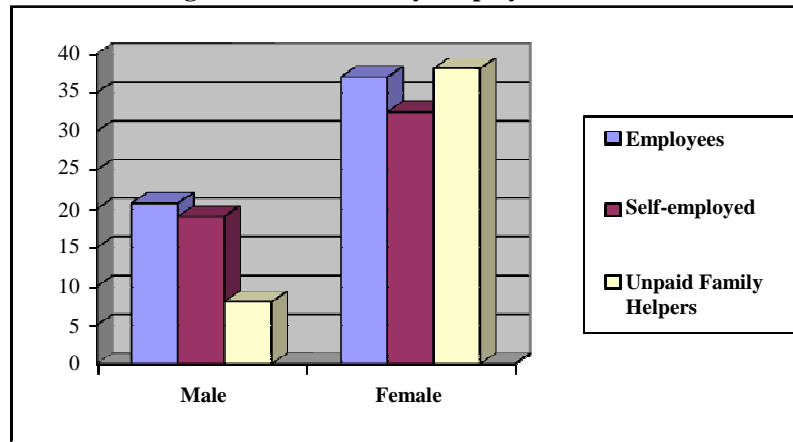
Source: Calculated from the micro-data of Time Use Survey, 2007.

4.3. Determinants of Time Poverty

The analysis carried out in the previous subsection primarily focused on the incidence of time poverty by gender, the place of residence and labour market indicators. Studies focussing on the determinants of time poverty include several other individual, household and community level variables that can be associated with time poverty.[11] Due to data limitation, it is not possible to examine the relationship between time poverty and all these variables. Focusing on some socio-demographic and labour market characteristics of the sampled persons who filled the diary, this section has carried out multivariate analyses to examine the relationship between time poverty and some of these characteristics. The dependent variable is time poverty which takes the value 1 if the sampled person is time poor; otherwise it takes the value 0. Since the dependent variable

[11]See for example, Bardasi and Wodon (2006), Lawson (2007), McGinnity and Russell (2007), and Merz and Rathjen (2009).

is binary, logistic regression rather than OLS is used for the multivariate analysis. Six models have been estimated. Model 1 is based on the entire sample (working and not-working persons) while models 2 and 3 are estimated separately for the male and female samples. Model 4 has included only the employed sample to analyse the relationship between time poverty and labour market indicators including occupation, industry, employment status and income. Models 5 and 6 divide the employed sample between urban and rural areas respectively to take care of the varying work patterns between the two types of areas.

Four independent demographic variables, age, sex, marital status and presence of children younger than 7 years in the household are included in the regression analyses while the level of educational attainment is used to study the relationship between time poverty and human capital. The place of residence represents the influence of community variables on time poverty. Four labour market indicators, occupation, industry, income and employment status, are included in models 4, 5 and 6 to understand their correlation with time poverty. Three seasonal dummy variables have also been included in models 4 and 6, as working hours in rural areas are considerably affected by changing seasons. The operational definition of all these variables and results of the six models are presented in Table 12.[12]

Model 1 includes the entire TUS sample. The results of this model corroborate the bivariate analysis carried out in the previous section. All variables included in this model have an independent and significant effect on the probability of being time poor. The employed persons are more likely to be time poor than those not employed/not-working. It is mainly because the not-working sample spends less time on the committed activities, particularly those falling under the SNA activities category. Moreover, the economically active women use their time in household maintenance and child care in addition to SNA activities. Estimation results of model 1 also show that overall, women are more likely to be time poor than men. As discussed earlier, the underlying cause behind this finding is their time use pattern. The quadratic relationship between age and time poverty also turns out to be significant. The significant and positive relationship between time poverty and being married shows that marriage increases the use of time on committed activities. Same is true for the presence of less than six years old children in the household. Model 1 shows a positive and significant relationship between time poverty and having no education or having education but below the matriculate level. It means that 10 or more years of education enable individuals to have more free time for activities like personal care and rest.

The results of models 2 and 3, in which the analysis is carried out separately for the male and female samples, show no major qualitative change in the findings except that living in urban areas has a positive relationship with male time poverty. In the case of the female model, this relationship turns out to be negative. It shows that males living in urban areas and females living in rural areas are more time poor than their counterparts. It is largely because of the involvement of rural women in farm activities.[13]

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[12]The decision to join the labour market (and the number of hours to be supplied) itself depends on a number of other variables including wage rate. To the extent that this may introduce endogeneity in the present context, the coefficients of the regression models that include employment status as an explanatory variable should be interpreted with care.

[13] See Tables 5 and 10.

Table 12

Logistic Regression: The Determinants of Time Poverty

Dependent Variable   Time Poor = 1

	Model 1 (Full Sample)	Model 2 (Males)	Model 3 (Females)	Model 4 (Employed)	Model 5 (Employed Urban)	Model 6 (Employed Rural)
Constant	–4.429*	–6.525*	–6.299*	–2.618*	–1.853*	–2.497*
Age (years)	0.084*	0.056*	0.130*	0.050*	0.010	0.070*
Age^2	–0.001*	0.000*	-0.002*	0.000*	0.000	–0.001*
Gender (male=1)	–1.088*	–	–	–1.064*	–0.439*	–1.375*
Place of Residence (urban=1)	0.094*	0.462*	–0.324*	0.119*	–	–
Employment Status (employed=1)	1.772*	3.557*	1.753*	–	–	–
Marital Status (married=1)	0.706*	0.104	1.187*	0.426*	0.433*	0.386*
Children < 7 Years in the Household (Yes=1)	0.286*	0.090*	0.458*	0.166*	0.114*	0.183*
Education (below matric=1)	0.392*	0.421*	0.236*	0.375*	0.372*	0.429*
Occupation (service workers, machine operators/unskilled=1)	–	–	–	0.007	0.166*	–0.049
Employment Status (unpaid family helpers=1)	–	–	–	0.097	–0.103	–0.148*
Industry (transport, trade and manufacturing=1)	–	–	–	0.763*	0.567*	0.857*
Monthly Income (below the minimum wage of Rs 7000=1)	–	–	–	0.208*	–	–
Season (Quarter 1=1)	–	–	–	0.418*	–	0.303*
(Quarter 2=1)	–	–	–	0.561*	–	0.544*
(Quarter3=1)	–	–	–	0.141*	–	0.044
N	37815	18308	19507	15959	5696	10263
– 2 log Likelihood	25513	12371	12144	15550	5938	9572

Source: Estimated from the micro-data of Time Use Survey, 2007.

   *Significant at 5 percent or less level of significance.

In order to learn about the relationship between time poverty and labour market indicators, model 4 has been modified to include only the employed sample. In this model, age, sex, marital status, education and place of residence have signs similar to those in model 1. The positive and significant relationship between time poverty and working as unskilled labourers, service workers and plant/machine operators in the urban areas (model 5) shows the hard work of these manual workers. It has been shown earlier that these workers, who are mainly males, spend little time in ex-SNA activities and work long hours in the labour market which makes them time poor. The number of such workers is perhaps too small in rural areas to provide sufficient variation for meaningful estimation of their effect. Although working women use relatively less of their time in the labour market, they take all kinds of responsibilities at home. This dual burden on the sampled women contributes to their time poverty. They are left with relatively little free

time for personal care and rest. Unpaid family helpers are generally rural females who, by definition, receive no income for their work, so that a dummy for this category is likely to be highly collinear with the income dummy. Dropping the income dummy from the regression for rural areas (model 6) makes the dummy for unpaid family helpers highly significant.

The industry, in which a worker is employed, is a strong correlate of his/her time poverty. Workers engaged in trade, transport and manufacturing sectors are more time poor than those engaged in other sectors including agriculture, service and construction. The monthly income also gives a similar message: the workers in low income groups are more time poor than the workers in high income groups.

5. CONCLUSIONS AND POLICY IMPLICATIONS

Availability of time use data is relatively a recent phenomenon in Pakistan. This has allowed us to measure time poverty and look at its incidence across gender, occupational groups, industries, regions, and income levels. The study also uses multivariate regression analysis to examine the relationship between its various determinants. The results of this study provide some important insights into the phenomenon of time poverty in Pakistan and lead to some interesting conclusions.

The first important finding of this study is that women spend more time in committed activities than men whether they are employed or not. As a result, women are more time poor than men in both the circumstances. A closer look at time use statistics indicates the reason behind this occurrence. It appears that there are certain ex-SNA activities, such as household maintenance, and care for children, the sick and the elderly, that are women specific probably due to socio-cultural reasons. Women have to perform these activities irrespective of their employment status, while Pakistani men are not usually involved in them. This substantially increases the time spent by women in committed activities. Since men spend little time in ex-SNA activities, they have more time available for non-SNA activities including leisure and personal care as compared to women.

The finding that women generally spend more time in committed activities and are more time poor as compared to men has two noteworthy implications that are likely to influence school enrolment decision of the females. According to the human capital theory, the decision to enrol in school depends, among other things, on the opportunity cost of education. The monetary value of the hours worked at home is one of the components of this opportunity cost. Since women work more hours at home as compared to men, their opportunity cost of getting enrolled in a school is likely to be higher, making them less likely to enrol in school. However, a cancelling factor is simultaneously at play. Women are also more time poor as compared to men because they work more hours at home. Hence, assuming that time poverty results in reduced labour productivity and workers are paid in the labour market according to their marginal productivity, women would earn less as compared to men for working the same hours. Consequently, another component of opportunity cost of education, which consists of the monetary value of the forgone work in the labour market, would be smaller for women. This would make them more likely to enroll in school. Thus, the net effect of women's time spent in committed activities on female school enrolment could either be positive or negative. However, this issue can only be sorted out by further empirical research that entails generating a single dataset that combines information that is available separately in time use and labour force surveys.

The results of this study also indicate that working women are far more time poor as compared to not-working women, because time spent by them in ex-SNA activities does not reduce considerably enough to compensate for the extra time they devote to their job. Moreover, women face a harder trade-off between higher labour market earnings and increased time poverty as compared to men. In other words, while entering the job market, not only they have to face higher time-poverty in exchange for reduced monetary poverty, but also the terms of exchange are more unfavourable for them than for their male counterparts. This raises the seemingly intriguing issue of whether expanding the job market for women through economic and noneconomic measures would make them better off? In the neoclassical framework, the choice of accepting or rejecting the job offer and number of hours worked will depend on the decision maker's marginal valuation of leisure as depicted by her preferences and valuation of time in the labour market as indicated by the prevailing wage rate. Assuming that women have the same preferences as men, it can be argued on the basis of the findings mentioned above that women have to make more difficult choices in their labour supply decisions as compared to men because women have to spend considerable time on certain ex-SNA activities even after joining the labour market.

Among the various categories of employment status, the case of female unpaid family helpers is unique in several respects. Time poverty among them is around five-folds the time poverty among their male counterparts. They are more time poor even as compared to fellow women in other employment status categories. The likely cause of the high incidence of time poverty among the females in the agriculture sector is the significant presence of unpaid family helpers.. The apparent reason for the huge gender gap in time poverty among unpaid family helpers is that female unpaid family helpers spent a lot more time on ex-SNA activities than their male counterparts.

People in certain professions such as unskilled, skilled and services sector are found to be more time poor as compared to people in other professions. The same is true for some industries like trade, manufacturing and transport. These professions and industries generally require extended hours from the workers, while offering low wage rates. This catches the workers in a situation in which they are both monetary and time poor at the same time. The close association of time poverty with low income found in this study corroborates our conclusion.

In the light of these findings, several policy areas emerge where we need to focus. The first thing that needs to be done is to generate awareness about a fair distribution of responsibilities between men and women. If this can be done, a significant portion of the gender gap in time poverty is likely to be eliminated.

The situation of female unpaid family helpers needs immediate attention not only due to both the magnitude and the gender gap in time poverty that they are facing, but also because they are more likely to be monetarily poor. Generally, these are the women who work along with other family workers in areas such as agriculture and household help and maintenance. As the name suggests, they do not receive any payment for their work. To fully understand their condition, a more thorough study focusing on this particular group is needed.

Though participation in the labour market, particularly among women, is not the only reason for time poverty, the findings of the study show that working people are generally more time poor as compared to the not working population and time poverty is concentrated in certain occupations and industries. This opens up an opportunity for the

government to play its part in reducing time poverty. The line of action is to enforce minimum wage laws to reduce monetary poverty of those who are more likely to be time poor as well and to put mandatory ceiling on work hours in the industries which have high concentration of time poverty. Eradication of monetary poverty in general can also go a long way in this respect by eliminating the need to work long hours at the lowest wage rate just to survive. Improving education also has significant potential in this regard, as high education is found to be associated with low time poverty.

Appendix Table 1

Socio-demographic Characteristics of Women

Age	Working	Not-working
10–14	7.4	17.7
15–19	11.1	13.2
20–24	13.7	12.5
25–29	14.8	12.0
30–34	13.9	10.3
35–39	11.2	8.0
40–44	8.4	6.0
45–49	7.3	5.0
50–54	4.7	3.7
55–59	2.6	3.2
60+	4.9	8.4
All	100	100
Highest Class Passed		
No Formal Education	71.8	54.8
< Primary	5.0	9.3
Primary	5.7	14.2
Middle	2.8	7.9
Matriculation	5.2	7.3
Intermediate	3.5	3.9
Degree and Above	6.1	2.6
All	1001	00

Source: Calculated from the micro-data of Time Use Survey, 2007.

Appendix Table 2

% Poor among the Employed Sample by Education and Gender

Education	Both Sexes	Male	Female
No Formal Education	26.9	18.7	41.1
Below Primary	20.6	19.8	25.6
Primary	21.6	20.7	30.8
Middle	21.8	21.2	32.2
Matriculation	20.7	19.7	30.2
Intermediate	16.1	15.0	23.9
Degree and above	13.6	13.0	16.4
All	22.5	18.9	36.8

Source: Calculated from the micro-data of Time Use Survey, 2007.

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