

A Review of Labour Force Participation Rates in Pakistan

by

M. AFZAL BEG*

INTRODUCTION

The purpose of this paper is to throw some light on the labour force in Pakistan with respect to its participation in agriculture and non-agricultural activity over the period 1961 through 1971; in addition some comparison is provided between the activity rates of 1951 and 1961. Finally some tentative explanations of the behaviour of labour force participation rates over the last decade are offered.

The data on which this study is based has been drawn from the 1951 and 1961 Censuses of Pakistan and from the Labour Force Survey of the Statistical Division, which is carried out as a regular sample enquiry on national basis since 1963. The data from these surveys has been used to provide estimates of economic activity for each year up to 1971. The population census of 1972 did not collect information on labour force activity.

The criteria for inclusion of a person in the labour force were different during the 1951 and 1961 Censuses. For the 1951 Census, the civilian labour force comprised all those persons 12 years and over who were self-supporting or partially self-supporting or were seeking work. For the 1961 Census, the civilian labour force comprised all those persons 10 years and over who were working for profit or earning wages or salary, helping any member of their family, or were not working but looking for work during the last week. Thus the unpaid family helpers, of which females in agriculture are a substantial portion, were included in the labour force in the 1961 Census, whereas they were excluded from the labour force in the 1951 Census. In the case of Labour Force Surveys the criteria for including a person in the labour force were more

*The author, formerly a Research Economist at the Pakistan Institute of Development Economics, is at present Assistant Professor, Institute of Statistics, University of the Punjab, Lahore. He is greatly indebted to Mr. John Craig of U.S. Bureau of Census, for his valuable suggestions for improvement of the paper.

or less the same as in the 1961 Census. The *civilian labour force* was defined to comprise the non-institutional population of 10 years and above who were found employed or unemployed during the reference period, i.e., last one week preceding the date of enumeration. The term *employed* included all persons who during the reference week were either working for pay or profit in cash or kind, including unpaid family helpers (who had worked at last 15 hours during the reference week) or had a job but did not work. The term *unemployed* included all those persons who during the reference week were either looking for work, or temporarily laid off, or assured of a job but did not start work. All those persons were considered *out of civilian labour force* who were (i) below 10 years of age (ii) keeping house (iii) going to school (iv) retired and not doing any work (v) agricultural landlords (vi) property owners other than agricultural landlords, and (vii) engaged in pursuits such as beggars, thieves, etc.

The changed definition of civilian labour force, various inconsistencies in coverage of the 1951 and 1961 Censuses, and problems in making survey materials consistent with census enumeration materials, make comparisons of labour force participation data over the years 1951-71 rather difficult. Every effort has been made in the following section to ensure comparability of coverage for any two years for which population and labour force data are compared. It has not proved possible, however, to obtain consistent figures for the entire period. As a result, in the following tables it will be observed that the 1961 figures show some variation from table to table. This variation arises from the adopted rule of adjusting the 1961 figures to agree with 1951 Census definitions when the later year is the basis of comparisons, and of retaining the unadjusted 1961 figures when comparisons are made with the Labour Force Survey materials, where coverage and definitions are roughly the same as for the 1961 Census.

II. SIZE AND COMPOSITION OF LABOUR FORCE

Table I shows the distribution of the population of Pakistan by economic categories from the 1961 Census and 1971 Survey. This table reveals that while Pakistan's total population has increased by 47.78 per cent, the population in the Civilian Labour Force has increased by 55.01 per cent during the decade from 1961 to 1971. Non-agricultural labour force shows a higher increase (62.82 per cent) than that of the agricultural labour force (49.65 per cent). Both agricultural and non-agricultural labour force have increased at higher rates than that of the total population. The situation appears slightly different during the intercensal period between the 1951 and 1961 Censuses, as seen from Table II, which shows the distribution of the population of Pakistan by economic categories for the 1951 and 1961 Censuses. Although there is an appreciable decennial increase of 55.01 per cent in the non-agricultural labour force, which is higher than the population increase (26.98 per cent) during the decade the agricultural labour force increased at a lower rate (19.75 per cent) than the population increase during the same period.

From Tables I and II it is observed that there have been relative increases in the proportion of non-agricultural labour force during 1951-61 as well as 1961-71, while the agricultural labour force proportions show decreases. The proportion of overall labour force however appears to show consistent increases during both decades. Some care, however, should be taken in accepting the

TABLE I

*Distribution of Population by Economic Categories in Pakistan
1961 and 1971*

Economic Category	1961 (Based on Census)		1971 (Based on Survey)		Per cent increase in 1971 over 1961
	Population (in 000's)	Percent	Population (in 000's)	Percent	
Total Population	42,880	100.00	63,370	100.00	47.78
Civilian Labour Force	13,876	32.36	21,509	33.94	55.01
Agricultural Labour Force	8,230	19.19	12,316	18.45	49.65
Non-Agricultural Labour Force	5,646	13.17	9,193	14.49	62.82

Sources: 1961 Census; 1971 Labour Force Survey.

TABLE II

*Distribution of Population by Economic Categories in Pakistan
1951 and 1961*

Economic Category	1951 (Based on Census)		1961* (Based on Census)		Per cent increase in 1961 over 1951
	Population (in 000's)	Per cent	Population (in 000's)	Per cent	
Total Population (exclud- ing special areas and Frontier Regions)	31,061	100.00	39,442	100.00	26.98
Civilian Labour Force	9,506	30.61	12,554	31.83	32.06
Agricultural Labour Force	6,187	19.92	7,410	18.79	19.75
Non-Agricultural Labour Force	3,319	10.69	5,144	13.04	55.01

*Labour force adjusted as per 1951 Census definition i.e. of 12 years and over.

Sources: 1961 Census of Pakistan; 1951 Census of Pakistan.

latter figures at their face value. For the decade 1951-61, there is considerable doubt as to whether labour force participation rates rose as indicated by the raw data. Coverage of female unpaid family workers has been a persistent problem in census taking; in the 1961 Census, the definition of labour force participation was changed such that it was only necessary to be *helping* a member of the family in order to be included in the labour force—the standard definition for the 1951 Census was not so broad. In addition, the Census statistics on female economic activity are generally accepted as being subject to large inaccuracies. As a result, the apparent increases in labour force participation rates between 1951 and 1961, in the face of demographic trends which, *ceteris paribus*, should have produced further declines in labour force participation [2], may have been what G.M. Farooq calls them: a statistical artifact. It may be as Farooq argues, that “the increase can be attributed to a change in labour force concepts between 1951 and 1961 so that unpaid family labour, particularly female, was excluded from the 1951 Census, but included in the 1961 Census [4 p.91].

Table III provides the estimates of agricultural and non-agricultural labour force in the total population for the years 1961 and 1963 through 1971. We notice that the proportion of the total population in the agricultural labour force has not changed much during the decade. The proportion of agricultural labour force in the total population rose from 19.19 per cent in 1961 to 19.72 per cent in 1963. After sometime it fell from 19.79 per cent in 1965 to 17.82 per cent in 1966.

TABLE III

Proportions of Agricultural and Non-Agricultural Labour Force in Population 1961 and 1963 to 1971

Year	Estimated Population* (in 000's)	Agricultural Labour Force		Non-Agricultural Labour Force	
		No. (in 000's)	Per cent of total Population	No. (in 000's)	Per cent of total Population
1961	42,880	8,230	19.19	5,646	13.17
1963	47,697	9,403	19.72	6,146	12.89
1964	49,440	9,785	19.79	6,906	13.97
1965	51,210	10,135	19.79	7,154	13.97
1966	53,072	9,465	17.83	8,277	15.59
1967	54,985	10,419	18.94	8,226	14.96
1968	56,978	10,646	18.68	8,436	14.81
1969	59,030	11,600	19.65	8,742	14.81
1970	61,160	12,162	19.87	8,957	14.64
1971	63,373	12,326	19.45	9,193	14.50

*Estimated on the basis of intercensal growth rate 1961-72 (3.6%) for the years 1963 through 1971.

Sources: 1961 Census; Labour Force Surveys, 1963-71.

It again increased gradually till it reached the level of 19.45 percent in 1971 which is only 0.26 percent higher than the proportion of 1961. Thus, if the Labour Force Survey data are reliable, one must conclude that the proportionate increase in the Civilian Labour Force over the decade 1961 to 1971 is due to the expansion of the labour force in the non-agricultural sector. There has been a significant proportionate increase in the supply of non-agricultural labour force if we assume that the labour force participation rate has increased over the decade 1961 to 1971. The proportionate increase in the non-agricultural labour force from 1961 to 1971 shown in Table III also supports this trend. In fact, almost all the proportionate increase in the civilian labour is due to the increase in the non-agricultural labour force during the decade 1961 to 1971.

III. LABOUR FORCE BY EMPLOYMENT STATUS

Next we consider the size and composition of the labour force in terms of employment status, which is provided in Table IV. The table indicates gradual increases in the labour force participation rates over the decade 1961 to 1971 except for 1966, 1968 and 1971 for which the labour force participation rates show declines as compared to their respective previous years. The apparent decline in the labour force participation rate during the year 1966-67 as compared to the year 1965-66¹ can be attributed to the effect of the Indo-Pakistan conflict of September 1965 on the economic life of the country. Moreover, the results for the year 1965-66 are based on the results of the survey for January-September 1965 and it is possible that the small sample might have tended to produce a one-sided picture by showing enhanced labour force participation rates. The decline during the year 1968-69 as compared to the year 1967-68, if it is a real decline and not a statistical one, can be attributed to the political upheaval in the country during that period. Finally the slight fall in the labour force participation rate during the year 1971-72 as compared to the year 1970-71 could be attributed to the impact of the Indo-Pakistan conflict which disturbed the normal conditions in the country. Whether the apparent decline in participation reflects real economic disruption, or simply disruption in the data-gathering/survey-procedures, however, is hard to say. The same applies to the two earlier years of apparent declines in labour force participation.

The proportionate increase of 1.62 percent in the labour force participation rate over the decade 1961 to 1971-72 is better explained if we look at the labour force participation rates for males and females separately. The proportionate increase in the labour force participation rate for males over the decade is 4.0% as compared to a negligible decrease of 0.02 per cent for the females [see Annexures B and C]. Thus the overall statistical increase in the labour force participation rates is entirely due to the increase in the labour force participation rates for males. The survey data indicate that labour force participation rates for females have almost remained constant over the decade except for a negligible rise or fall for certain years. The sex distribution has a bearing on the size of the labour force. Higher proportion of males than females are gainfully employed. Custom and tradition with respect to employment have some effect particularly on the number of women entering the labour force due to female's traditional roles of house-wife and mother. Before

¹Estimates of labour force are not available separately for the years 1964-65 and 1965-66 because no labour force survey was conducted in some quarters of these years. Estimates for January-September 1965 are taken for both the years 1964-65 and 1965-66.

completely ruling out any change in labour force participation rates for women. However, one should recall the criticisms of the Census coverage made by Farooq and others; we have good reason to believe that female coverage has been inadequate in the census-taking process. Whether the same difficulties have persisted in the survey work is difficult to say.

The same pattern of proportionate increase or decrease is, more or less, reflected in the employment rates defined as percent of total population, not labour force, over the decade 1961 to 1971. There is an overall proportionate increase of 1.44 per cent in the employment rates from 1961 to 1971. This overall increase is entirely due to an increase of 3.85 per cent in the employment rate for males over the same period. The employment rate for females has remained constant throughout this period except for the year 1968 (when there was a decline of 2 per cent as compared to the year 1967). It may be pointed out that there is also a proportionate decrease of 1.6 per cent in the labour force participation rate for females for the year 1968. Thus this decline in the employment rate for females for 1968 is partly due to the decline in the labour force participation rate for females for the same year and partly due to the substantial increase in the employment rate for males for the same year.

IV. EXPLAINING LABOUR FORCE PARTICIPATION RATES

The review of labour force data in the preceding sections has provided us with some statistical evidence of an upward trend in labour force participation rates. We have noted, however, that the data are marred by inconsistencies both in coverage and in method of collection, and that there is reason to suspect that the apparent increase could possibly be a statistical artifact. This conclusion is rendered suspect, however, by the fact that for the time period in which coverage should be most consistent, the 1963-1971 period covered by the Labour Force Survey a slight upward trend, as indicated in Table V, is apparent, though substantial yearly variation also exists.

TABLE V
Labour Force Participation Rates and Gross Domestic Product at
Constant Factor Cost for the Years 1961-62 to 1971-72*

Years	Labour Force Participation rate	Gross Domestic Product at constant factor cost (Million Rs.)
1961-62	32.36	18,362
1962-63	32.48	19,693
1963-64	32.60	20,932
1964-65	33.76	22,685
1965-66	33.75	24,150
1966-67	33.43	25,311
1967-68	33.91	27,156
1968-69	33.49	28,896
1969-70	34.46	32,302
1970-71	34.53	32,329
1971-72	33.94	32,627

* Participation figures for 1962-63 have been arrived at by interpolation.
Sources: 1961 Census, Labour Force Surveys, 1963-71; Planning Commission, Economic Research Section.

The troublesome feature of the apparent upward trend in labour force participation lies in the fact that *a priori* reasoning based on existing social, economic, and demographic conditions in Pakistan would lead us to expect a downward trend to be the more likely state of affairs. High birth rates coupled with declining mortality produce a population base which should be growing more rapidly than its working age component. Historically, urbanization and industrialization have been characterized by declining labour force participation [1]. In a cross-sectional study of 1961 Census data on labour force participation in Pakistan, G.M. Farooq found the expected negative relationship between labour force participation rates and measures of industrialization, urbanization, and school attendance in West Pakistan [2]. How then can we reconcile this evidence with the apparent upward trend in participation rates for 1961-71?

One explanation is of course the statistical one: it may be that while coverage of the agricultural labour force has remained fairly uniform, coverage of the non-agricultural labour force, particularly the urban male component of it, has increased, thus raising the overall participation rate as the non-agricultural share has risen over time. The already observed continued reported low levels of female activity in the non-agricultural sector, however, do not give much support to this explanation. We must therefore inquire into the circumstances which could produce a real rise in activity rates.

It is possible that the negative effect of the above mentioned modernization factors on labour force participation rates could be more than offset by the positive impact of an expanding economy on labour force participation. As has been observed elsewhere, labour force participation may vary positively with general economic activity levels: the greater demand for labour associated with an expanding economy tends to generate its own supply by inducing marginal workers to enter the labour force ranks. If a modernizing economy is growing sufficiently rapidly, the positive impact of expanding job and income opportunities (or even the belief, correct or incorrect, that paying jobs are to be had) could conceivably outweigh the negative effects of such variables as urbanization and rising school attendance on labour force participation rates. Farooq was unable to take into account the macro-activity forces in this cross-sectional study, and consequently throws little light on this subject.

Data limitations and statistical difficulties severely complicate any test of this hypothesis; the available time series on participation rates is both short and of dubious reliability; all of the modernizing variables (urbanization indices, school enrolment rates) tend to be highly correlated with any index of economic activity levels, thus introducing multicollinearity problems into the regression analysis estimation procedure. Nevertheless, an effort is made here to "explain" the rising labour force participation rates for the 1961-71 period as being a function of the overall rising levels of economic activity, the assumption being that expanding economic opportunities during this period have had more impact on participation rates than have the constraining influences of modernization.

The results of this effort are shown in equations (1) and (2), where the 1961-71 participation rates have been regressed on the level of Gross Domestic Product (constant factor cost) and on the year-to-year change in GDP. As a general index of economic activity, it is expected that the GDP variable will

explain most of the upward trend in participation rates, while the annual change in GDP will explain yearly fluctuations in the rates, both variables being positively related to participation rates. (A more ideal index of the forces we are trying to measure here would have been an income figure adjusted for employment opportunities—interpreted as the “probability” of increasing one’s welfare by entering the labour force; however, employment data are considered to be so unreliable as to rule out that approach). In the equations, standard errors are shown in parentheses below their respective coefficients.

(1)	$LFPR = 30.12^* + .00013^* GDP + .00011 DGDP$ (.64) (.000023) (.000139)		Uncorrected R ² = .79 Corrected R ² = .74 D-W = 1.85
(2)	$LFPR = 30.26^* + .000126^* GDP$ (.60) (.000023)		Uncorrected R ² = .77 Corrected R ² = .75 D-W = 1.80

Where LFPR = Labour Force Participation Rates, 1961-71
 GDP = Gross Domestic Product, constant factor cost
 DGDP = Change in Gross Domestic Product
 * Significant at .05 level.

Given the quality of the data and the limitations of the explanatory model, the equations provide a fairly good fit. The corrected coefficient of determination for both equations (.74 and .75) is respectable, and while the coefficient of the change in GDP is not significantly different from zero, inclusion of the variable improves the Durbin-Watson statistic (a measure of the extent of autocorrelated disturbances) and raises the uncorrected R² slightly. The correlation coefficient between GDP and DGDP is only .023, thus ruling out any multicollinearity problems. While a simply fit of LFPR on DGDP and a time variable yields a better Durbin-Watson of 2.03, corrected R² is lowered to .72. With the many *caveats* offered to this point, this analysis at least leaves open the possibility that the momentum provided by an expanding economy can lead to rising labour activity rates, despite the constraining influences of modernization.

Thus, while we are unable to throw any decisive light on the question of whether the apparent increase in participation rates between 1951 and 1961 was a real or only a statistical phenomenon, we have observed that the time series data since 1961 indicate that for the latter period a real increase may have occurred. Moreover, we may conclude that an important variable necessary for explaining changes in labour force participation rates over time is the general level of economic activity, and have noted that for methodological and data reasons the Farooq cross-sectional study was unable to say anything about the role of this variable. In any event, our analysis supports Farooq’s contention that “...given the numerical importance of marginal workers, particularly women and children, in the less developed countries (LDCs) the supply of labour even in the short run can not be taken as exogenous” [2, p. 267].

V. SUMMARY AND CONCLUSIONS

In this paper we have discussed briefly the civilian labour force in terms of economic categories and employment status. For this purpose, we used the data of 1951 and 1961 Censuses and 1963-64 to 1971-72 surveys conducted by the Statistical Division, Government of Pakistan. An analytical review of these data reveals that the agricultural labour force as a percentage of the population has remained more or less constant during the decade 1961 to 1971. The proportionate increase in the labour force during this period is accounted for by the increase in the non-agricultural labour force.

While Pakistan's total population has increased by 47.78 per cent, the population in the civilian labour force has increased by 55.01 per cent during the decade. Non-agricultural labour force shows a higher increase—of 62.82 per cent—than the agricultural labour force which records a 49.65 per cent increase. Thus both the agricultural and the non-agricultural labour force have increased at higher rates than the total population. Another inference, is that the labour force participation increase, is due to the increase in the participation rates for males.

The increase in labour force participation rates has been gradual during the decade. In fact a slight decrease in activity rates was noticed during certain years which could be attributed to major events like the Indo-Pakistan Wars of 1965 and 1971 and the political upheaval in the country in 1969 and the changes in national production and output because of these disturbances. Almost the same pattern of proportionate increase or decrease is reflected in the employment rates over the decade.

Finally, it has been noticed that participation rates vary not only with modernization factors but also may be heavily influenced by the general level of economic activity and its change over time. Convincing answers to questions on the determinants of labour force participation and long run behaviour of activity rates, however, await the development of reliable cross-sectional and time series data, particularly the latter, on the relevant rates. If the reliability of the current Labour Force Survey work can be demonstrated, we will be in a much stronger position for making definitive statements on this aspect of labour and manpower phenomena.

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	1961		1969		1971		1973	
	(000's) Number	% of total	(000's) Number	% of total	(000's) Number	% of total	(000's) Number	% of total
Labour force	50,000	61.64	35,148	61.40	35,540	60.54	33,000	60.00
Not in civilian								
Unemployed	543	0.87	125	0.35	531	0.88	205	0.82
Employed	13,033	31.30	12,301	35.38	10,424	33.58	10,880	33.19
Force	13,810	33.36	12,240	35.00	10,001	33.50	10,345	33.49
Civilian								
Population	45,820	100.00	41,001	100.00	40,440	100.00	38,088	100.00
Employment								
Economic and	(000's) Number	% of total	(000's) Number	% of total	(000's) Number	% of total	(000's) Number	% of total
Employment	10,345	22.78	10,001	24.39	10,001	24.73	10,345	27.16

Distribution of Population by Economic and Employment Status for the Years 1961 to 1973

ANNEXURE 'A'

ANNEXURE 'B'

Distribution of Male Population by Economic and Employment Status for the year 1961 and 1966 to 1971

Economic and Employment Status	1961		1966		1967	
	Number (000's)	%of total population	Number (000's)	%of total population	Number (000's)	%of total population
Population	23,014	100.00	27,825	100.00	29,159	100.00
Civilian labour force	12,656	54.99	16,045	57.61	16,873	57.86
Employed	235	0.02	15,703	56.38	16,554	56.77
Unemployed	12,421	53.97	342	1.23	319	1.09
Not in civilian labour forces	10,358	45.01	11,807	42.39	12,286	42.14

1968		1969		1970		1971	
Number (000's)	%of total population	Number (000's)	%of total population	Number (000's)	%of total population	Number (000's)	%of total population
29,799	100.00	31,020	100.00	32,011	100.00	33,341	100.00
17,646	59.22	18,689	60.24	19,229	60.07	19,671	59.00
17,293	58.03	18,352	59.16	18,911	59.08	19,278	57.82
353	1.19	337	1.08	318	0.99	393	1.18
12,153	40.78	12,331	39.76	12,782	39.93	13,670	41.00

*Sex breakdown for the years 1963 to 1965 is not available from Labour Force Surveys.

ANNEXURE 'C'

Distribution of Female Population by Economic and Employment Status for the Years 1961 and 1966 to 1971

Economic and Employment Status	1961		1966		1967	
	Number (000's)	%of total population	Number (000's)	%of total population	Number (000's)	%of total population
Population	19,866	100.00	25,220	100.00	25,826	100.00
Civilian labour force	1,220	6.14	1,697	6.73	1,772	6.86
Employed	8	0.04	1,683	6.67	1,767	6.84
Unemployed	1,212	6.10	14	0.06	5	0.02
Not in civilian labour forces	18,646	93.86	23,523	93.27	24,054	93.14

1968		1969		1970		1971	
Number (000's)	%of total population	Number (000's)	%of total population	Number (000's)	%of total population	Number (000's)	%of total population
27,179	100.00	28,010	100.00	29,149	100.00	30,032	100.00
1,436	5.28	1,653	5.90	1,890	6.48	1,838	6.12
1,288	4.74	1,488	5.31	1,737	5.96	1,787	5.95
148	0.54	165	0.59	153	0.52	51	0.17
25,743	94.72	27,357	94.10	27,209	93.52	28,194	93.88