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Rural Non-agriculture Employment and Poverty in Pakistan

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1. INTRODUCTION

There is ample evidence that poverty, which declined rapidly in Pakistan in the 1980s, has returned in the 1990s [Amjad and Kemal (1997); Ali and Tahir (1999); Jafri (1999); Qureshi and Arif (2001)]. Consequently large number of Pakistanis, more than one-third of the total population, live currently far below what can reasonably be regarded as a decent standard of living. Poverty has generally been higher in rural areas than in urban areas. This gap could not be bridged overtime; still the greatest degree of poverty is found in the countryside. To address rural poverty, policy-makers have long been looking to the growth potential of the farm sector of the rural economy. Non-agricultural activities in rural areas have received little attention. This neglect, however, may be socially costly. It has been shown in several recent empirical studies that nonfarm activities occupy an important place in rural economies throughout the developing world [Hazell and Haggblade (1993); Adams and He (1995); Bakht (1996); Sen (1996); Lanjouw (1999)]. They expand quite rapidly in response to agriculture development, and therefore merit special attention in the design of strategies concerning poverty alleviation in rural areas.

The rural nonfarm sector in Pakistan, like many in other developing countries, is a heterogeneous sector covering a wide spectrum of activities. The pursuit of this diversification leads one to explore the potentials of the whole range of nonfarm activities. There is a considerable body of literature on poverty in Pakistan. This literature, however, has largely ignored the importance of nonfarm sector in poverty alleviation. Only few recent studies, based on relatively small sample size, have examined linkages between rural nonfarm sector and poverty. For example, Adams and He (1995) examined sources of nonfarm income inequality, and Nasir (2001)

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made links between poverty and formal and informal sector employment in rural and urban areas of the country. Nevertheless, differences in the nature of economic activities between poor and non-poor engaged in the rural non-farm sector have not yet been extensively explored. In view of the growing importance of nonfarm activities in the rural economy, this examination is critical particularly in drawing policy recommendation for poverty alleviation in rural areas. The present study fills this gap and examines the issues surrounding nonfarm employment and rural poverty in Pakistan.

This paper is divided into seven sections. Section two presents some theoretical considerations of rural non-farm employment and poverty. Data sources and definitional issues are discussed in section three. Section four outlines the trends in rural poverty during 1990s in Pakistan. Non-farm activities in rural Pakistan are explained in section five. The correlates of non-farm rural employment are discussed in section six. Conclusions are presented in the final section.

2. RURAL NON-AGRICULTURAL EMPLOYMENT AND POVERTY: SOME THEORETICAL CONSIDERATIONS

In rural areas, the access to land is considered as one of the major avenues for raising socio-economic status. Major economic activities in these areas are related directly or indirectly to the agriculture sector. Employment in rural non-agricultural sector has traditionally been viewed as a low productivity sector producing low quality goods. According to this perspective, as an economy undergoes structural transformation, importance of the rural non-farm activities in general and rural industries in particular, will decline in response to evolving conditions and influences. A model constructed by Hymer and Resnick (1969) explains the decline of rural non-agricultural activities in the colonial era. This model shows that peasants use only labour to produce two types of goods, food and some simple non-agricultural produce, to serve their own needs. The non-agricultural activities—defined as Z-goods—consist of the household or village production of handicrafts and services including some textiles, garments and food processing for village consumption. However, as the subsequent colonial era increasingly linked the rural economy with the world economy, labour was induced to move out of the production of Z-goods and into the production of cash crop for exports. As a consequence, there was a decline of the Z-goods sector and an expansion of both exports and imports.

However, recent development experience in many developing countries does not lend support to this hypothesis [Bhattacharya (1996)]. Ranis and Stewart (1993) have argued that the Hymer and Resnick model was intended primarily to apply to the colonial era, and even in that era the assumptions made in the model were not universally applicable, either with respect to the likely movement of the terms of trade or the inferior character of Z-goods. Especially when extended to the post-colonial era, there are a number of assumptions, which do not necessarily apply.

Rather Ranis and Stewart show that macro as well as sectoral and micro policies determine whether an economy will follow a balanced growth pattern with a vigorously participating Z-goods sector, or whether the Z-goods sector will be displaced by imported goods or by subsidised urban domestic goods.

The evidence from East, South East and same South Asian countries indicates that nonfarm development follows or parallels rapid gains in agriculture production. This can spur expansion and growth in rural industry and commerce, commencing usually near cities, but spreading eventually to include a broad spectrum of the rural economy [Ranis and Stewart (1993); Yusuf and Kumar (1996)].

Moreover, the fast growing rural labour force cannot be much absorbed in the almost employment overcrowded agriculture sector of many developing countries. There has been an increasing trend towards growth of village and rural industries, trade and transportation for providing alternative opportunities of employment as well as for meeting the rising need of the rural people [Hayat and Qamar (1989); Khanna (1991); Mahmud (1996); Varma and Kumar (1996)]. An analysis of rural poverty should therefore encompass as broad as a view of the rural economy. This implies that not only that the links between rural poverty and the agriculture sector should be examined, but that the rural non-agricultural economy should also receive attention [Ninan (1995-96); Lanjouw (1999)].

Nonfarm activities are generally divided into two broad groups of occupations: 'high-labour-productivity that leads to high-income activity, and low-labour-productivity activities that serve only as residual source of income' [Lanjouw (1999)]. The latter activities are common among the poor. But, such employment may be very important from a social welfare perspective. If agriculture employment is not an option for certain subgroups of rural population, then rural non-agricultural employment opportunities, even if they are not highly remunerative, can make a real difference, especially for those households that do not possess farmland.

It must be realised that available data on rural nonfarm earnings do not show the clear pattern of equity enhancement. However, it has been shown that access to nonfarm earnings does improve the absolute income levels of the poor [Haggblade *et al*. (1989); Sen (1996); Lanjouw (1999)]. The increasing landlessness in rural Pakistan has largely pushed the rural labour force out of agriculture into probably low productivity activities in the nonfarm sector. Even a low return from such participation may contribute to enhance household income and consequent increase in the welfare of labour households.

Rural non-agricultural sector is usually an important source of secondary employment for the small and landless farmers [Anderson and Leiserson (1980)]. Sen (1996) has shown the greater importance of nonfarm occupations for the landless and functionally landless group with land-size up to 0.5 acres in Bangladesh. Those among the latter who manage to participate in non-farm activities have low incidence of poverty than their counterparts in farm occupations. In

Pakistan, a substantial proportion of rural households own no land. An overwhelming majority of farmers is in the small sector. On average they cultivate less than three acres of land [Altaf (2001)]. Finding part-time local nonfarm employment is vital for the welfare of these farmers and their families.

In short, the contribution of nonfarm rural economy seems to be high in South Asian countries (like Pakistan) where unfavourable labour-land-ratio limit income-earnings opportunities in agriculture [Mohammad and Badar (1985); Kruijk (1987); Admas and He (1995)]. A dynamic labour-intensive agriculture combining with a modernising non-agricultural sector can lead to a broad spread of employment and income, with resulting rapid growth, egalitarian distribution, elimination of rural underemployment and slowing of rural-urban migration. While designing poverty alleviation strategies for rural areas, nonfarm activities also deserve attention. This paper explores linkages between nonfarm activities and rural poverty in Pakistan.

3. DATA SOURCES AND DEFINITIONAL ISSUES

This study is mainly based on the primary data set generated by the 1996-97 Household Integrated Economic Survey (HIES) carried out by the Federal Bureau of Statistics.[1] It is nationally representative survey covering 14497 households (8929 rural and 5568 urban) [Pakistan (2000)]. For the estimation of poverty and income distribution, HIES is the very commonly used data source, which also provides information sufficient to link poverty with sectors of employment.[2]

For this study clarification of three concepts, 'rural' 'nonfarm activities' and 'poverty' seems to be essential. Rural non-farm activities lie on or between the boundaries of the usual rural-urban and agricultural and non-agricultural categories. There is no simple system of classification that can adequately capture the complex structure of spatial and sectoral interrelationships that characterise rural and urban areas in developing countries. However, some such system is required for analysing the nature and growth of nonfarm activities. A degree of arbitrariness is commonly applied in dividing line between rural and urban areas. Some studies have distinguished between rural and urban areas, rural towns, and urban industrial cities and towns. Rural sector in these studies includes small and medium-sized towns whose economic role and functions are closely and directly linked to agriculture and the needs of the rural population [Anderson and Leiserson (1980); Bakht (1996)]. However, the nature of statistical sources available sometimes makes it difficult to separate rural towns from other rural or urban areas of the country. It therefore becomes necessary to work with the narrower definition of rural, excluding urban settlements [Newman and Canagarajah (2000)].

[1]The 1993-94 HIES and 1998-99 Pakistan Socio-economic Survey were also partially used in this study. For sample design details of the Pakistan Socio-economics Survey, see [Arif *et al*. (1999)].

[2]The common source of data for employment is the Labour Force Survy (LFS). It differs from the HIES in the reference period, which is one month preceding the survey in the HIES and one week in the LFS.

As noted above, this study is based on the 1996-97 HIES, which draws boundaries between rural and urban areas as defined in the 1981 population census. In this census, an administrative criterion was used to define 'urban': all municipal/town committees and metropolitan areas were treated as urban. In this study therefore 'rural towns' given the administrative status of municipal or town committees are treated as urban. This may imply correspondingly limited definition of nonfarm rural employment, since it has been argued that one has to look beyond 'rural' areas[3] [Bakht (1996)].

Similarly, in the nonfarm literature, there are several prevailing approaches to the concept and definitions of 'nonfarm'. One approach is to identify nonfarm by industry, with the result that an individual's occupational status (whether the individual is an employer, employee, or self-employed) is irrelevant to the definition. Further divisions of the dominant agriculture sector may also treat livestock separate. Following some recent nonfarm literature, this paper focuses on the occupational aspect [Sen (1996); Nowman and Canagarajah (2000)]. Livestock and agricultural services are included with agriculture. The nonfarm work thus includes wage work and all self-employment that is not self-employment in agriculture.

Poverty lines used in this study are based on the Cost of Basic Needs approach. The basket of 'basic needs' consists of food, clothing, housing, health, education, transportation and recreation. The cost of food component of this basket was equal to the food poverty line, based on the estimated cost of food consistent with a calorie intake of 2550 per adult equivalent per day for rural areas. A daily intake of 2295 calories per adult equivalent was considered for urban areas of the country. The cost of non-food elements of the basket was determined by assuming that those households whose food expenditure were equal to the food poverty line would also satisfy their other basic needs. The average expenditure of these households on non-food components of the basket was taken as the estimated cost of non-food items.[4] Food and non-food expenditures were added up to get the poverty lines. Separate lines were computed for rural and urban areas.

4. RURAL POVERTY IN THE 1990s

Table 1 sets out data on rural poverty for three years: 1993-94, 1996-97 and 1998-99.[5] Poverty in Pakistan is considerably higher in rural areas than in urban areas. This is true across the three poverty measures shown in this table: incidence of poverty, poverty gap and poverty severity. However, it was not only the 1990s when poverty levels were found relatively higher in rural areas. These differences

[3]Even within rural areas, the nature of nonfarm activities could vary between irrigated and non-irrigated areas of the country. This variation, however, has been taken into account in the present analysis.

[4]This approach has also recently been used by Lanjouw (1999) and Qureshi and Arif (2001).

[5]For the first two years, HIES data sets were used. For the 1998-99 period, the Pakistan Socio-economic Survey (PSES) estimates were utilised [Qureshi and Arif (2001)].

prevailed throughout the history of Pakistan, particularly since the 1960s [Irfan and Amjad (1984); Malik (1988)]. Poverty in Pakistan has therefore been considered to be overwhelmingly rural.

Table 1 also highlights some more interesting points concerning poverty trends in the 1990s. First, poverty increased overall as well as in rural and urban areas of the country between the 1993-94 and 1998-99 period.[6] At the end of the last decade, more than one-third households in the country were below the poverty line; being this level very close to 40 percent for the rural areas in 1998-99. Second, the rise in poverty in the 1990s was relatively higher in rural sector than its counterpart, urban sector. As a consequent, gaps in poverty levels between these two sectors increased modestly from about 6 percent in 1993-94 to 8 percent in 1998-99. Third, in terms of the number of poor in urban and rural areas, although about 68 percent of the total population of the country resides in rural areas, more than 70 percent of all poor persons live in this sector. Finally, the findings of present study with respect to trends in poverty in the 1990s are in line with the results of some recent studies that

Table 1

Poverty Trends in the 1990s by Rural and Urban Areas

Year	Rural-Urban Areas	Poverty Incidence (P_0)	Poverty Gap (P_1)	Poverty Severity (P_2)	Population			
					Total	%	Poor	%
1993-94								
	Total	27.4	5.31	1.6	119390	100.0	40289	100.0
	Rural	29.9	6.67	1.8	81880	68.6	30238	75.1
	Urban	23.1	4.82	1.4	37510	31.4	10052	24.9
1996-97								
	Total	29.6	5.8	1.7	128420	100.0	47206	100.0
	Rural	31.6	6	2.1	86890	67.7	34120	72.3
	Urban	27.4	5.9	1.1	41530	32.34	13086	27.7
1998-99								
	Total	35.2	7.58	2.47	134510	100.0	56401	100.0
	Rural	39.8	8.39	2.6	90130	67.0	39084	69.3
	Urban	31.7	9.67	3.5	44380	33.0	17317	30.9

Source: Computed from the 1993-94 and 1996-97 HIES data sets; For 1998-99, [Qureshi and Arif (2001)].

[6]During the last four decades the rise or fall in poverty has generally been in the same direction for both rural and urban areas of the country except in the 1960s when urban poverty decreased but there was a considerable rise in rural poverty, which resulted in an overall increase in poverty during the Pakistan's development decade. This rise in rural poverty was largely contributed to the significant changes in the agrarian structure, especially the size of distribution of land holdings, [for detail, see Irfan and Amjad (1984); Zaidi (1999)].

not only poverty, which declined in the 1970s and 1980s, has returned in the 1990s but also this increasing trend continued at the end of the last decade.[7]

The question is how do poverty levels differ across rural population groups engaged in farm and nonfarm activities? In the nonfarm literature, these differentials have been explored primarily by two ways. The one common way is to determine poverty levels by the size of land holdings [Lanjouw (1999)]. The other way is the estimation of poverty by activity status [Newman and Canagarajah (2000)]. Table 2 shows poverty differentials by activity status (occupation), based on the 1996-97 HIES data set. Obviously agriculture is the dominant activity of rural work force in Pakistan, being the main activity of more than half of the employed rural labour force. However, a substantial proportion of the rural employed labour force, more than 40 percent, is also engaged in non-farm activities.[8]

The present study classifies individual workers into farm and farm categories on the basis of primary and secondary occupations. In this regard we construct three categories of both farm and non-farm individual workers: first category "Main agriculture (Main non-farm)" is based on main occupation only; second category "Any agriculture (Any non-farm)" contains those individuals whose has both primary and secondary occupations same, either agriculture or non-agriculture; and the third category "Only agriculture (Only non-farm)" includes those individuals who exclusively work in agriculture or exclusively in non-farm activity.

Table 2 presents poverty statistics by these categories. This table shows that the poverty levels were remarkably similar, around 33 percent, across these three groups of workers. A clear result from all combinations is that participation either in

Table 2

Poverty Levels by Activity Status of Rural Employed Workers, 1996-97

Activity Status	Share (%)	Poverty Incidence (P_0)	Poverty Gap (P_1)	Poverty Severity (P_2)
Main Agriculture	54.1	33.2	6.1	1.7
Main Nonfarm	45.9	33.9	6.7	2
Any Agriculture	55.8	33.1	6.1	1.7
Any Nonfarm	46.9	34.1	6.7	2
Only Agriculture	52.5	32.8	6	1.8
Only Nonfarm	43.7	33.9	6.7	2

Source: Computed from the 1996-97 HIES.

[7]See for example, [Amjad and Kemal (1997); Ali and Tahir (1999); Jafri (1999); Qureshi and Arif (2001)].

[8]Changes in the share of farm and non-farm activities overtime have been dealt in detail in the next section.

farm or in nonfarm activity does not corresponds to lower rates of poverty. The results even do not show the benefits of diversification since individuals in combinations of agriculture and nonfarm activities do not have lower levels of poverty than agriculture or nonfarm only.

These findings, however, are different from the common perception that poverty within rural areas is concentrated in nonfarm households. For instance, Qureshi and Arif (2001) classified the rural sampled households into farm and non-farm categories, based on the reported 'industrial status' of the head of household. If the status was agriculture, a household was considered as a farm household. The rest of the households were grouped into the non-farm category, including those whose industrial status was not reported. They show that non-farm households were poorer than their counterparts, farm households. The present study, as noted above, does not show any major difference in poverty levels between farm and non-farm sectors of employment based on the occupational status of individual workers. Poverty estimates based on industrial status of the head of household could be misleading, since rural households earn their livelihood from different sources. Therefore, based on the poverty estimates across occupational groups, it is hard to believe that non-farm activities in rural Pakistan are primarily low-labour-productivity that serve only as residual source of income.

The situation becomes clearer when poverty levels among wage workers engaged in nonfarm employment are compared with agricultural labourers. Results are presented in Table 3, which shows that the incidence of poverty among the non-agricultural wage employees was much lower than the agricultural labourers. It appears from statistics presented in Tables 2 and 3 that the households engaged in nonfarm occupations occupy an intermediate position between farmers and agricultural labourers. This suggests that non-farm sector considered, as a whole can no longer be viewed as a residual category. These findings are similar to the results of Sen (1996) concerning rural non-farm sector in Bangladesh. Still it is difficult to claim that non-farm employment in rural Pakistan is a rout out of poverty. The present analysis, however, does show that, at least for the land-poor group, a shift from farm to non-farm activities will most likely be poverty-reducing.

Table 3

Poverty Level for Wage Employees in Agriculture and Non-agriculture Sector

Poverty Measures	Agricultural Labourer	Non-farm Wage Employees
Poverty Incidence(P_0)	46.1	33.7
Poverty Gap(P_1)	10.3	6.7
Poverty Severity(P_2)	3.2	1.9

Source: Computed from the 1996-97 HIES.

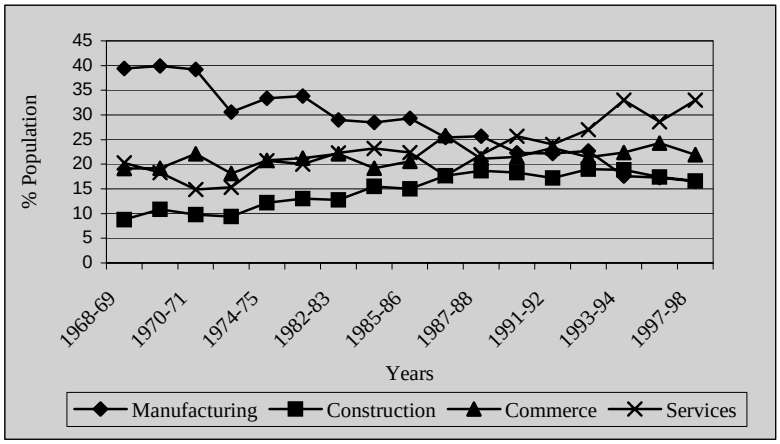
An overwhelming majority of farmers in rural Pakistan is in the small sector. It is evident from the experience of other developing countries that poverty among small farmers is markedly higher than among larger landowners or among households that are not cultivating [Lanjouw (1999)].[9] Adams and He (1995) have raised their concern about the distributional effects of agricultural growth in rural Pakistan, where land is unevenly distributed. In this situation it is difficult to see how a boost in agricultural production would eliminate rural poverty. Land reform would seem potentially important, but one should not underestimate the political difficulties involved. Pakistan introduced three land reforms in 1959, 1972 and in 1977. Legally there has been decline overtime in the permissible ceiling on land ownership. However, the impact of these three land reforms has been quite limited as far as the farm size distribution is concerned. Mass migration to urban areas is also an unappealing prospect; it would probably result not so much in a decline of total poverty as simply a shift from rural to urban sector as a potential route toward poverty alleviation. The problem of rural poverty could be mitigated by rural non-agriculture sector development efforts. In many developing countries, there has been an increasing trend towards growth of village and rural industries, trade and transportation for providing alternative opportunities of employment as well as for meeting the rising need of the rural people [Khanna (1991)]. Rural non-agricultural activities in Pakistan have been discussed in detail in the following sections.

5. NON-AGRICULTURAL ACTIVITIES IN RURAL PAKISTAN

According to data generated by the seventeen Labour Force Surveys during the last three decades on industrial status of individual workers, agriculture is the dominant sub-sector accounting for about 61 percent of all rural employment in 1996-97. But the employment share of this sector is seen to have declined from a level of approximately 70 percent in 1968-69 (Appendix Table 1). The inter-temporal comparison is reflective of shift away from the agriculture to non-agriculture employment.

Within the rural non-agricultural sector, four sub-sectors construction, service, manufacturing and commerce, are relatively more important. Major trends in these activities are shown in Figure 1. There is an impressive growth in service sector. Its share in total non-agricultural employment increased from 20 percent in 1968-69 to about 33 percent in 1997-98. An increase was also observed in construction and trade sectors. In contrast, the share of manufacturing in total non-agricultural employment has drastically declined from 39 percent in 1968-69 to 16 percent in 1997-98. Overall employment structure represents a shift away from commodity production to services orientation of the rural non-agricultural economy.

[9]In the subsequent analysis, poverty levels across different land holding groups will be computed.



Source: Labour Force Surveys.

Fig. 1. Percentage Distribution of Persons Employed in Rural Non-agriculture Sector by Major Activities, 1968-69–1997-98.

There are several reasons for this shift. Overseas migration seems to be one of the major factors that have affected rural employment structure. Arif and Irfan (1997) have examined extensively occupational shifts among migrants returned from the Middle East. There was a clear move out of the production sector into business category. Production sector employment declined by approximately 40 percent, with corresponding gains in the agriculture and business sectors, especially the latter. Non-agricultural income accrue to rural households primarily through wage employment and self-employment; these categories constitute more than 94 percent of all nonfarm workers (Table 4). There was no real difference in poverty levels of these two categories of workers. However, Table 4 shows a marked difference in the nature of activities between self-employed and wage employees. Approximately two-thirds of self-employed were in trade and transport sectors. Service and manufacturing were other important sectors for this category (self-employed). For wage employees, construction and service activities account for as much as two-thirds of rural non-farm employment in this category. Transport and manufacturing were the other important sectors of employment for wage employees. In construction, the employment is mainly in the construction of dwellings, farm buildings and roads. In commerce, the employment is primarily in retail trade. In services, in addition to traditional rural services, government employees, occupied mainly in educational and medical services, account for substantial proportion of employment in this sector (Appendix Table 2).

Table 4

Non-farm Employment in Rural Pakistan by Employment Activity and Employment Status, 1996-97

Activity	All Non-farm Workers	Self-employed and Wage Employees	Only Self-employed	Only Wage Employees
Mining	0.5	0.5	0.4	2.9
Manufacturing	13.4	12.3	13.2	11.9
Food and Beverages	2.1	1.9	1.8	1.9
Textile	5.5	5.1	6.2	4.8
Wood, Paper and Handicraft	2.6	2.2	3.5	1.8
Chemical, Metal and Nonmetal	3.2	3.1	1.7	3.4
Electricity, Gas and Water	1.5	1.6	0.1	1.9
Construction	24.1	25.5	2.5	31.7
Wholesale and Retail Trade	16.6	15.0	53.3	.2
Hotel and Restaurant	2.7	2.6	2.4	2.6
Transport and Communication	12.1	12.5	12.4	12.5
Real Estate	0.9	0.9	0.5	1.0
Services	28.3	29.1	15.2	31.4
Social Services	20.1	21.4	0.8	25.8
Household Services	8.2	7.7	14.4	5.6
Total	100.0	100.0	100.0	100.0
% Distribution	100.0	93.8	20.2	73.6
(% Poor)	(33.9)	(33.6)	(33.7)	(33.6)

Source: Computed from the 1996-97 HIES.

Table 5 presents data on the nature of activities of wage employees controlling according to their poverty status. Data on the nature of activities of males and females are also presented in this table. For the wage-employee category, service activities appear to be particularly important to the non-poor, as 28 percent of non-agricultural employment of those employees who are not poor is in this sector, relative to 21 percent for the poor. The non-poor engaged in the service sector might be mostly in educational and medical services run by the government. Activities that are particularly important for the poor include construction, service including domestic services, transport, textile, wood and handicraft. Such activities might resemble more closely the low productivity options, providing incomes to persons who lack an alternative source of income. For example, wages of construction workers (semi-skilled and unskilled) are very low in the country (Appendix Table 3). In real terms they have declined overtime or best are stagnant.

Table 5

Non-farm Employment in Rural Pakistan of Wage Employees by Activity and Poor/Non-poor, 1996-97

Activity	Poor	Non-poor	Male	Female
Mining	2.4	3.1	2.9	0.5
Manufacturing	12.3	11.8	11.5	24.4
Food and Beverages	2.1	1.8	2.0	1.1
Textile/Garments	5.1	4.6	4.4	13.2
Wood, Paper and Handicraft	2.5	1.5	1.7	6.9
Chemical, Metal and Nonmetal	2.6	3.9	3.4	3.2
Electricity, Gas and Water	1.3	2.2	2.0	–
Construction	39.1	27.9	32.7	5.8
Wholesale and Retail Trade	3.8	4.4	4.4	1.1
Hotel and Restaurant	2.3	2.7	2.7	0.5
Transport and Communication	11.2	13.1	13.0	0.5
Real Estate	0.1	1.4	1.0	0
Services	27.4	33.5	29.9	67.2
Social Services	20.6	28.4	24.9	46.0
Household Services	6.8	5.1	5.0	21.2
Total	100.0	100.0	100.0	100.0
N	1658	3245	4706	189
(%)	(33.6)	(66.4)	(96.1)	(3.9)

Source: Computed from 1996-97 HIES.

Table 5 shows that the share of women in the total non-farm wage employment was very low, only 4 percent. Two-thirds of all women employed in this sector as wage employees were in service sector. For men, by comparison, the figure is below one-third. Other sector that particularly important for women is manufacturing. For men the principal activities are construction, transport, manufacturing and trade. The importance of construction for poor deserves emphasis because it lends itself more easily, perhaps, to policy intervention than do most other non-agricultural activities.

For the self-employed category, according to Table 6, trade activities appear to be particularly important for the non-poor; 58 percent of them were found in these activities, relative to 45 of poor self-employed workers. For the poor, transport, manufacturing and service were other important activities. There were a concentration of men in trade sector, while self-employed women in rural nonfarm sector were heavily engaged in manufacturing, particularly garments, and service activities. The self-employed poor engaged in different rural nonfarm activities deserve special attention especially in providing credit to expand their enterprises so they can enhance household income.

Table 6

Non-farm Employment in Rural Pakistan of Self-employed by Activity and Poor/Non-poor, 1996-97

Activity	Poor	Non-poor	Male	Female
Mining	–	0.7	0.5	–
Manufacturing	16.6	11.5	11.1	57.4
Food and Beverages	2.2	1.6	1.9	–
Textile	7.1	5.8	4.5	37.1
Wood, Paper and Handicraft	4.9	2.8	3.1	10.0
Chemical, Metal and Nonmetal	2.4	1.3	1.6	4.3
Electricity, Gas and Water	–	0.1	0.1	–
Construction	1.8	2.8	2.5	1.4
Wholesale and Retail Trade	44.5	57.8	55.1	20.0
Hotel and Restaurant	2.4	2.3	2.4	1.4
Transport and Communication	17.3	9.9	13.1	–
Real Estate	0.2	0.7	0.5	–
Services	17.2	14.2	14.6	25.7
Social services	0.2	1.1	0.5	5.7
Household services	17.0	13.1	14.1	20.0
Total	100.0	100.0	100.0	100.0
N	452	895	1277	70
(%)	(33.6)	(66.4)	(94.8)	(5.2)

Source: Computed from the 1996-97 HIES.

It is worth examining the nature of rural enterprises, which are particularly important as a source of non-agricultural rural income. Table 7 provides breakdown of these enterprises as well their contribution to employment, as reported by the rural household covered in the 1996-97 HIES. In total 1380 enterprises were established by the sampled rural households; of which 63 percent were fixed and permanent establishments. The total range of activities in which businesses were engaged was quite large, but more than 58 percent of all enterprises were involved in trade and hotel/restaurants. Other important sectors were household services, transport, textile (garments) and woodwork including handicraft.

Table 7 shows that on average 1.4 persons were employed in rural enterprises. Most of them were family members. They are thus primarily a source of employment for family members. It is likely that most of these businesses are small. Impact of such business on poverty is yet to be established; it would be carried out in the subsequent analysis. Moreover, it appears from Table 7 that the non-farm sector has barely begun the process of generating wage employment; future potential of wage employment will depend largely on the expansion of rural industries.

Table 7

Non-agricultural Enterprises Owned by Rural Households

Activities	No. of Enterprises	Average No. of Workers	Average No. of Family Workers	% Fixed Establishments
Mining	–	–	–	–
Food/Beverage	28	1.8	1.6	92.9
Textile	84	1.6	1.5	6.7.9
Wood/Paper/Handicraft	47	1.8	6	70.2
Chemical/Metal	27	2.1	1.4	51.9
Electricity	2	1.0	1	–
Construction	2.0	1.7	60.7	–
Wholesale/Retail Trade	6	1.3	1.2	72.4
Hotel/Restaurant	41	1.8	1.3	85.4
Transport and Information	164	1.3	1.1	3.0
Real Estate	12	2.2	1.1	66.7
Social Services	18	1.2	1.1	88.1
Household Services	198	1.3	1.2	62.1
All Activities	1380	1.4	1.3	62.7

Source: Computed from the 1996-97 HIES.

6. CORRELATES OF NON-AGRICULTURAL EMPLOYMENT

In earlier sections, rural poverty and its linkages to farm and nonfarm employment were discussed through mostly bivariate relationship. This section examines the determinants associated with participation in nonfarm activities in a multivariate dimension. Three models were estimated. Model 1, which is for all workers, includes all farm and nonfarm workers. The dependent variable takes a value of one if the person is employed in non-agricultural sector and zero otherwise. The second and third models contain only nonfarm workers. In the second model, the dependent variable takes a value of one if the person was self-employee in nonfarm sector and zero otherwise. In the third model, it takes a value of one if the person was wage-employed in the nonfarm sector and zero otherwise.

A number of factors could influence the decision to participate in nonfarm activity. A common one is the non-availability of land and relative stagnancy of agriculture [Varma and Kumar (1996)]. In the three specified equations, however, only four explanatory variables, age, sex, education and household size, were included.

Results are presented in Table 8. Age is positively associated with the probability of non-agricultural employment in all three models. At the higher ages this probability declines. Women are significantly less likely than men to be in nonfarm activities, particularly employed as wage employees (Models 1 and 3). But,

interestingly they are more likely to be self-employed than men in the nonfarm sector. It has been shown earlier than the self-employed women were involved mainly in garments and household services. Household size is positively associated with self-employed category (Model 2). This association is significantly negative in the other two models.

Table 8 also shows that relative to the uneducated (reference category), those with some education are generally more likely to find employment in the non-agricultural sector. In Model (1), all categories of education, primary, middle, matriculate and higher, are all statistically significant. All these categories but middle one are also significant in other two equations (Models 2 and 3). Thus a higher level of education increases the probability of entering the rural nonfarm sector.

Table 8

Logistic Regression Effects of Production on Employment in Non-farm Sector

Variables	Model 1 (all Workers)	Model 2 (Non-farm Workers)	Model 3 (Non-farm Workers)
Household Size	0.97*	1.04*	0.93*
Sex (Male=1)	4.32*	0.75*	2.30*
Age	1.09*	1.05*	1.05*
Age2	0.99*	0.99	0.99*
Education			
Primary	1.84*	1.43*	0.69*
Middle	2.28*	1.19	0.95
Matriculation	3.64*	0.80*	1.30*
High Level	6.22*	0.28*	3.25*
LRX2	17868	6314	7305
N	14509	6655	6655

Source: Computed from the 1996-97 HIES.

*Shows significance at 5 percent level or better.

7. CONCLUSIONS

This paper has examined linkages between rural non-agricultural employment and poverty in Pakistan. Although agriculture still dominates in rural employment, its importance has declined overtime. There is a shift away from farm to nonfarm activities in rural areas. Within the nonfarm sector, the share of manufacturing has declined substantially with a corresponding increase in the importance of service, transport and construction sub-sectors.

The present analysis shows that there has been a recently rise in poverty overall as well as in rural and urban areas of the country. Poverty is not only relatively higher in rural area but also it is widespread across all groups of population. However, non-farm workers no longer appear to be the worst category of the poor. Wageworkers in the non-farm sector have been better off than at least

agricultural labourers. Service and trade sectors are important in reducing rural poverty. Poor concentrate in construction, transport and manufacturing sectors.

Enterprises owned by rural households are small and employ primarily family members. It has not begun the process of generating wage employment, which depends largely on establishment of rural industries. The multivariate analysis shows that age, education, sex and household size are the major determinants of being employed in the rural non-farm sector.

It can be concluded that a dynamic labour-intensive agriculture combining with a modernising non-agriculture sector can lead to a broad spread of employment and income, with resulting rapid growth, egalitarian distribution and elimination of rural poverty. Policy intervention to promote non-farm employment is also justified to stop, to some extent, migration to cities. The design of rural development policies, in addition to providing the support necessary to raise agricultural productivity, should also be addressed to needs of local nonfarm activities. In particular, the growth and concentration of such activities in rural towns and villages raises substantially the demands for infrastructure services—electricity, water supplies, roads, schooling, health—for vocational training in nonfarm activities, for banking and credit, and for the development of local urban institutions.

Appendices

Appendix Table 1

Percentage Distribution of Employed Persons by Agriculture and Non-agriculture Sector Employment

Year	Agriculture	Non-agriculture	Total
1968-69	69.54	33.46	100
1969-70	71.75	28.25	100
1970-71	71.76	28.24	100
1971-72	70.61	29.39	100
1974-75	72.08	27.92	100
1978-79	67.38	32.62	100
1982-83	67.69	32.31	100
1984-85	66.69	33.31	100
1985-86	70.94	29.06	100
1986-87	68.72	31.28	100
1987-88	67.49	32.51	100
1990-91	63.79	36.21	100
1991-92	64.15	35.85	100
1992-93	63.12	36.88	100
1993-94	66.00	34.00	100
1996-97	60.83	39.17	100
1997-98	65.13	34.87	100

Source: Labour Force Surveys.

Appendix Table 2

Percentage Distribution of Off-farm Workers by Occupation and Sex (%)

Occupation	Male	Female
Blacksmith	1.1	–
Potter	0.5	0.4
Weaver	0.2	8.8
Taxi Driver	5.1	0.4
Carpenter	0.9	0.6
Mason	2.0	0.6
Teacher	4.3	14.0
Government Service	18.4	1.9
Construction	14.4	0.8
Nurse/Midwife	0.3	4.1
Domestic Service	0.7	14.0
Piece Worker	2.0	13.0
Factory Worker	12.0	18.9
Private Service	35.3	0.4
Tailor	1.3	7.6
Cart Driver	0.6	–
Pesh Imam	0.6	1.4
Others	0.3	–

Source: Rural Financial Market Survey, 1995-96.

Appendix Table 3

Daily Wages of Construction Workers in Different Cities

Categories/Workers/ Cities	1990	1991	1992	1993	1994	1995	1996	1997	1998
Carpenter									
Islamabad	100.00	112.00	145.00	150.00	150.00	175.00	190.00	200.00	200.00
Karachi	121.86	131.66	155.00	164.81	178.94	205.00	219.62	231.15	250.00
Lahore	113.93	129.28	129.28	150.00	151.42	185.00	195.71	217.50	226.42
Peshawar	100.00	100.00	100.00	115.00	135.00	135.00	150.00	175.00	200.00
Quetta	110.00	126.25	170.00	170.00	180.00	200.00	215.00	230.00	250.00
Mason (Raj)									
Islamabad	100.00	120.00	145.00	150.00	150.00	175.00	190.00	200.00	200.00
Karachi	121.86	131.66	150.00	161.82	177.78	205.00	234.61	245.19	250.00
Lahore	113.57	128.57	128.57	150.00	151.42	185.00	197.14	217.50	226.42
Peshawar	100.00	100.00	100.00	115.00	135.00	135.00	150.00	175.00	200.00
Quetta	110.00	126.25	147.50	162.50	175.00	188.75	210.00	225.00	250.00
Labour (Unskilled)									
Islamabad	50.00	60.00	65.00	70.00	77.50	90.00	95.00	100.00	110.00
Karachi	57.14	59.23	65.00	73.40	80.88	101.80	133.20	156.53	160.00
Lahore	57.85	71.07	71.07	85.71	85.71	105.00	108.21	117.14	122.50
Peshawar	37.50	47.50	50.00	50.00	60.00	65.00	70.00	75.00	80.00
Quetta	45.00	51.25	58.75	75.00	77.50	77.50	95.00	95.00	110.00

Source: Government of Pakistan (2000).

*Data pertain to the month of November each year.

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Comments

The paper makes important contributions in at least three major areas. First, it provides an update on the poverty trends during the 1990s in Pakistan at the rural and urban level. It gives the poverty levels by activity status of employed workers in rural areas. Second, it provides useful information on changes in the composition of rural non-agricultural sector by major activities, from 1968-69 to 1997-98. Based on a survey conducted in 1996-97, the distribution of non-farm employment by employment status and activities and the poverty levels are presented. Third, correlates of non-agricultural employment through a regression equation conclude the discussion of major empirical findings.

I am in broad agreement with the general argument of the authors for each of the three areas described above. My comments supplement the discussion and try to indicate the additional areas of research that need to be addressed in future work.

(i) Trends in Poverty in the 1990

There is a general consensus in Pakistan that the poverty levels in the decade of 1990s have risen. The authors provide a consistent estimate of the trends in poverty for the period which support the presumption of rising incidence of poverty. The evidence on the poverty levels by the activity status of rural workers shows that poverty levels are broadly similar for all activities and inter-activity differences in poverty are not significant. This is an important finding. However it goes against most evidence from other countries. The authors further show that poverty level for non-farm wage employees at 33.7 percent is significantly lower than the poverty level for agricultural labourer at 46.1 percent. This has an implicit implication that poverty for persons other than wage employees in the non-farm sector should be considerably higher than similar category in the farm sector. Is it so? If so, what is the economic and institutional explanation for the phenomena. To be fair to the authors, I would like to point out that there is a genuine lack of empirical research in this area. There is a clear need for more research before the puzzle is solved in the case of rural Pakistan.

(ii) Non-agricultural Activities in Rural Pakistan

The discussion in this section is useful but quite limited in scope. It is confined to employment shares of manufacturing, construction, commerce and services in rural non-agricultural sector for the period 1968-69 to 1997-98 and detailed profiles of the non-farm rural sector for the year 1996-97. In addition to the employment shares, information on the income shares and how it has changed over time is needed to determine the impact of structural transformation on poverty. It is also important to keep in view what authors mean by ‘rural’ and ‘non-farm’. In the context of official data in Pakistan, definition of rural areas is based on size of localities. One could

reasonably argue that rural areas be defined broadly to include all rural settlements, market places and towns that serve the agricultural hinterland. This broader definition is more appropriate for policy purposes. Non-farm is defined in the paper to be a sector other than agriculture, forestry and fishing. Depending on the revised broader definition of rural areas the trends, pattern and composition of non-farm sector would change substantially. Some studies in Pakistan indicate that the contribution of non-farm sector to household incomes is much higher as compared to its employment contribution. Some additional areas of importance in the context of rural non-farm transformation are the nature of changes in labour, land and capital markets. The present paper does not provide a discussion on these aspects.

(iii) Determinants of the Non-farm Transformation

The major difficulty I have with the policy prescription advocated in this paper is that it is not based on any comprehensive analysis of the determinants of the rural non-farm transformation including in it the impact of past policies on the time path of this transformation process. The discussion on the correlates of non-agricultural employment provided in the paper is helpful but falls far short of any meaningful discussion on the required policy response. The answer to the question as to why rural non-farm activity has varied so much over time in Pakistan and across different countries can provide a handle for the determination of optimal policy choices. The roles of agricultural growth, population pressure, rural towns, rural infrastructure, macro and trade policies are separately and jointly instrumental in shaping the growth of rural non-farm sector. I argue that a comprehensive analysis of the determinants of non-farm sector is needed before we can come up with a menu of policy changes for promoting the non-farm sector in Pakistan.

In conclusion, I would suggest that the research agenda on the role of rural non-farm sector in poverty alleviation and broad based growth needs to go beyond the analysis of macro data provided by the censuses and national surveys. Micro studies on the village economy supplemented by the sectoral studies can be useful for a fuller understanding of the non-farm structural transformation including its impact on poverty alleviation.

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