

**Mapping the Spatial Deprivation of Pakistan**

Haroon Jamal, Amir Jahan Khan, Imran Ashraf Toor,  
and Naveed Amir 91

**The Changing Profile of Regional Inequality**

Haroon Jamal and Amir Jahan Khan 113

**Poverty and Inequality during the Adjustment Decade:  
Empirical Findings from Household Surveys**

Haroon Jamal 125

**Children in Different Activities: Child Schooling and  
Child Labour**

Rana Ejaz Ali Khan 137

**BOOK REVIEWS**

M. Ashraf Janjua. **History of the State Bank of Pakistan  
(1978–1988)**

*A. R. Kemal* 161

Malavika Karlekar (ed.). **Paradigms of Learning: The Total  
Literacy Campaign in India**

*Samina Nazli* 167

Sophie Laws, with Caroline Harper and Rachel Marcus.

**Research for Development: A Practical Guide**

*Mir Annice Mahmood* 170

**SHORTER NOTICES** 173

## Mapping the Spatial Deprivation of Pakistan

HAROON JAMAL, AMIR JAHAN KHAN, IMRAN ASHRAF TOOR,  
and NAVEED AMIR

Geographical targeting may be a viable way to allocate resources for poverty alleviation in developing countries. Efficiency can be increased, and leakages to the non-poor reduced substantially, by targeting needy areas. A national and regional database of substantial poverty maps or deprivation indices are not readily available in Pakistan. Further, existing activities of poverty alleviation are carried out on *ad hoc* basis in the absence of identified pockets of poverty. This paper presents indices of multiple deprivations based on the 1998 Population and Housing Census data. Possible applications of this exercise include identifying areas of need, making decisions on regional and sectoral priorities, facilitating targeted public interventions through special poverty alleviation programmes, understanding the relationship between poverty and its causes, and helping federal and provincial governments in determining financial awards.

### 1. INTRODUCTION

Macroeconomic constraints on public spending have made it all the more important that scarce resources must be spent effectively, and with the greatest incidence and impact on the poor. Targeting social and development programmes involves making distinctions between the ‘deserving’ and ‘non-deserving’ population.

Geographical targeting is appealing because it is comparatively simple to administer. Different parts of the country—regions, provinces, divisions, and districts are ranked by some measure of deprivation. This measure could be income-based poverty, or more commonly, an indicator of education, health, and access to other basic services or living standards. Resources are then allocated in an inverse proportion to average welfare, so that the poor regions receive higher per capita transfers than the rich ones. Alternatively, rich areas can be excluded from the special programmes altogether.

As part of its poverty alleviation strategy, the Government of Pakistan has developed a number of safety-net programmes that seek to expand access to or improve the quality of basic services and thereby the welfare of people. These programmes have explicitly stated reaching the poor as a prime objective. However,

Haroon Jamal, Amir Jahan Khan, Imran Ashraf Toor, and Naveed Amir are respectively Principal Economist and Research Officers at the Social Policy and Development Centre (SPDC), Karachi.

*Authors' Note:* The views expressed are those of the authors and do not necessarily represent those of the SPDC.

to date there has been little analysis on the monitoring of whether these objectives are actually being met. The mechanism of allocating special funds for poverty alleviation among various provinces, regions, or districts for identifying or targeting the poor is not yet clear.

The debate also attempts to include the criterion of backwardness in determining the national and provincial financial awards. This requires a national and regional database of poverty maps or deprivation indices, which are not yet available in Pakistan.

This paper provides to the planners district-wise poverty or deprivation indices, based on the Population and Housing Census data of 1998. A possible application of this exercise includes identifying areas of need, making decisions on regional priorities, targeting interventions and resources, and understanding the relationships between infrastructure, resource availability, and poverty.

## **2. SECTORAL COVERAGE**

The indices are based on the premise that multiple deprivations are made up of separate dimensions or 'sectors' of deprivation. These sectors reflect different aspects of deprivation. Each sector is made up of a number of indicators, which cover aspects of this deprivation as comprehensively as possible. However, the selection of indicators is purely based on the data availability in the Population and Housing Census, 1998. No other published or unpublished information is used in the analysis to make the exercise less disputable or debatable so far as the data source is concerned. This approach makes some sectors less representative, but is preferred in order to avoid any reservations regarding the quality of data. The selected sectors and indicators in constructing indices of multiple deprivations are described below, while a schematic view of indicators is furnished in Table 1. All sectoral indices and the Index of Multiple Deprivations are also constructed separately for urban and rural areas.

### **2.1. Education Deprivation**

Deprivation in the education sector is represented by current and future levels of deprivation. Two measures, adult illiteracy and children out of school, are included in the sector. The UNDP incorporates the inverse of these two measures to construct the Human Development Index (HDI).

Literacy in the 1998 Census is defined as the "ability of a person to read a newspaper or write a simple letter in any language". Illiteracy is measured in terms of ratio and computed as a percentage of illiterate persons among the population aged 10 years and above. Children between the ages of 5 to 9, who are not attending school, are taken to compute out-of-school children at the primary level. The gender disparity is incorporated taking these measures separately for male and female population.

Table 1

*Variables Used to Represent Sectoral Deprivations***Education**

- Illiteracy Rate (10 Years and above) – Female
- Illiteracy Rate (10 Years and above) – Male
- Out of School Children (5–9 Years) – Female
- Out of School Children (5–9 Years) – Male

**Housing Quality and Congestion**

- Percentage of Non-owner Households
- Percentage of Homeless Population
- Inadequate Material Used in Roof
- Inadequate Material Used in Wall
- Households with No Bathroom Facility
- Household with No Kitchen Facility
- Households with No Latrine Facility
- Housing Units with One Room
- Persons Per Room.

**Residential Housing Services**

- Un-electrified Households
- Households Not Using Cooking Gas
- Households with No Inside Piped Water Connection

**Employment**

- Unemployment Rate (15–65 Years).
- Employed Labour Force in Non-manufacturing Sectors

---

*Source:* Pakistan Population and Housing Census (1998).

**2.2. Health Deprivation**

The most widely used indicator of health deprivation is the Infant Mortality Rate (IMR). The rate is computed on the basis of three years' average death of children before age 1. Although the Census provides information necessary to compute IMR, yet this is only for one year. Therefore, a comparable IMR could not be computed from the Census information. Another important health output indicator is life expectancy or deprivation in longevity, which is measured as the percentage of people not expected to survive to age 40. The Census provides no information of this health-related aspect either. Therefore, no indicator of health deprivation is included in the analysis due to the absence of required information.

**2.3. Deprivation in Housing Quality**

The sector identifies people living in unsatisfactory and inadequate housing structures. It is represented by a series of indicators. The house structure is treated as

inadequate if un-baked bricks, kacha, wood, or bamboo are used in the construction of a wall or roof. Two indicators are used to measure housing congestion: percentage of households with one room and persons per room. Percentage of households which are lacking essential facilities such as kitchen, bathroom, and toilet are included in the deprivation index. Non-ownership of house and, in the extreme case, homelessness are also added to the deprivation list.

#### **2.4. Deprivation in Residential Services**

Access to basic utilities is an important aspect of people's everyday life. Deprivation for this sector includes households with no electricity, households using wood or kerosene oil as cooking fuel, and households with no inside water availability.

#### **2.5. Employment Deprivation**

'Employment deprived' are defined as those not working but looking for work and laid off. To capture the disguised employment, a proxy is used which considers the proportion of labour force in the non-manufacturing sector.

### **3. METHODOLOGY FOR COMBINING INDICATORS**

At stage 1, indicators in each sector were combined to create Sectoral Indices. Except person per room, all the indicators fore-mentioned are simple rates (percentage of the population affected by the type of deprivation) and may easily be combined. Person per room is standardised with the minimum and maximum. Instead of assigning equal weight to each indicator in a particular sector, Principal Component Technique of Factor Analysis is used to generate weights. This statistical procedure assigns the greatest weight to those variables which have the greatest variance (or dispersion). Therefore, indicators with the lowest level of inequality will have the lowest weight. These derived weights are presented in the Appendix. After assigning these weights, four sectoral indices are computed and then ranked in order to compare deprivation levels across districts and provinces.

Once four sectoral indices have been calculated, an overall Index of Multiple Deprivation (IMD) is derived. Having considered various options, it is decided to employ the criteria used by the UNDP in deriving the Human Poverty Index (HPI). The following formula is used to derive the IMD.

$$IMD = [ 1/4 * \{ (E)^\alpha + (HQ)^\alpha + (HS)^\alpha + (L)^\alpha \} ]^{1/\alpha}$$

Where;

$$\begin{aligned} IMD &= \text{Index of Multiple Deprivation} \\ E &= \text{Index of Education Deprivation} \end{aligned}$$

$HQ$  = Index of Deprivation in Housing Quality  
 $HS$  = Index of Deprivation in Housing Services  
 $L$  = Index of Deprivation in Employment  
 $\alpha = 3$

The value of  $\alpha$  has an important impact on the value of the index. If  $\alpha=1$ , the IMD is the average of its four sectors. As  $\alpha$  rises, greater weight is assigned to the sector in which there is most deprivation. Following the UNDP, the value of  $\alpha$  is set at 3 to give additional but not overwhelming weight to the area of greater deprivation. This gives an elasticity of substitution of 1/3 between any two indices and places weight on those dimensions in which deprivation is larger. The technical detail is provided in the UNDP Human Development Report (1997).

All these indices are nationally ranked. However, for ease of interpretation and comparison, these rank orders are re-ranked provincially, assigning the rank of 1 to the most deprived district (with the highest value of deprivation index in the province).

#### 4. PRESENTATION OF RESULTS

Detailed district ranking and indices are furnished in the Appendix. This section summarises the major finding of the study. Classifying the districts in terms of high, medium, and low deprivation on the basis of one-third national population in each of the categories provides a useful basis for analysis. High deprivation refers to the one-third national population residing in the most deprived areas (highest magnitudes of the Index of Multiple Deprivation).

Table 2 gives information regarding the distribution of deprived population across provinces. According to the table, of the persons residing in high deprivation, 18 million belong to Punjab, 9 million each to the NWFP and Sindh, and 6 million to

Table 2

*Population Distribution according to the Level of Deprivation—Overall  
(Million Persons)*

|             | Deprivation Level |        |       | Total  |
|-------------|-------------------|--------|-------|--------|
|             | High              | Middle | Low   |        |
| Punjab      | 18.42             | 28.08  | 27.12 | 73.62  |
| Sindh       | 9.46              | 8.23   | 12.75 | 30.44  |
| NWFP        | 9.05              | 6.66   | 2.02  | 17.74  |
| Balochistan | 5.77              | 0.03   | 0.76  | 6.57   |
| Pakistan    | 42.71             | 43.01  | 42.64 | 128.36 |

Balochistan. On the other extreme, about 27 and 13 million persons residing in low-level deprivation belong to the Punjab and Sindh provinces. The percentage of population living at low deprivation level in the NWFP and Balochistan is 2 and 1 percent respectively.

Table 3 provides distribution of national population by high, medium, and low deprivation levels across provinces. However, while the overall distribution is interesting, it is the distribution by rural and urban areas that is more meaningful for policy purposes.

Table 3  
*Shares in Multiple Deprivation*  
*(% of Provincial Population Residing in)*

|                    | Deprivation Level |        |     |
|--------------------|-------------------|--------|-----|
|                    | High              | Medium | Low |
| <b>All Areas</b>   |                   |        |     |
| Punjab             | 25                | 38     | 37  |
| Sindh              | 31                | 27     | 42  |
| NWFP               | 51                | 38     | 11  |
| Balochistan        | 88                | 1      | 11  |
| <b>Rural Areas</b> |                   |        |     |
| Punjab             | 26                | 27     | 47  |
| Sindh              | 49                | 48     | 3   |
| NWFP               | 25                | 48     | 27  |
| Balochistan        | 89                | 7      | 4   |
| <b>Urban Areas</b> |                   |        |     |
| Punjab             | 30                | 47     | 23  |
| Sindh              | 23                | 14     | 63  |
| NWFP               | 60                | 40     | 0   |
| Balochistan        | 100               | 0      | 0   |

Balochistan emerges as the most deprived province with over 89 percent of rural population residing in high deprivation districts. The proportion of its rural population residing in low deprivation districts is a minor 4 percent. In the urban areas, the province has a dismal state of development. The entire urban population is resident in high deprivation districts and the province share in low as well as medium deprivation districts is zero. Quetta, the provincial capital, does not even qualify for medium deprivation status.

Similarly, in Sindh, only 3 percent of the rural provincial population resides in low deprivation districts. The extent of the rural-urban inequality in Sindh is stark. While 49 percent of the rural population resides in high deprivation areas, 63 percent of the urban population resides in low deprivation areas. In fact, urban Sindh stands

out as the least deprived in the country. Incidentally, this population is largely concentrated in Karachi. It needs to be noted as well that over one-fourth of Sindh's urban population resides in high deprivation districts. This specifies the development gap between Karachi and other urban centres in the province.

The NWFP appears to be at an intermediate stage of development. Over a quarter of rural population of the province is resident in low deprivation districts, and almost half (48 percent) is resident in medium deprivation districts. The urban development situation is not as positive. Sixty percent of its urban population resides in high deprivation districts, and no part of its urban population resides in low deprivation areas.

Punjab is the only province where nearly half (47 percent) of its rural population resides in low deprivation districts. Punjab's position, however, is not as enviable with respect to urban areas, where 23 percent of its urban population resides in low deprivation districts.

Table 4 through Table 7 present the standing of districts in various deprivation categories. Districts are listed in order of magnitude of the overall Index of Multiple Deprivation, from high to low in each deprivation category.

Table 4

*District Position in Overall Deprivation Level—Punjab*

| Deprivation Level |                 |                |
|-------------------|-----------------|----------------|
| High              | Medium          | Low            |
| 25 %              | 38 %            | 37%            |
| Rajanpur          | Bahawalnagar    | Attock         |
| Muzaffargarh      | Khanewal        | Toba Tek Singh |
| D.G. Khan         | Mianwali        | Jhelum         |
| Layyah            | Vehari          | Gujrat         |
| Lodhran           | Okara           | Faisalabad     |
| Bhakkar           | Khushab         | Gujranwala     |
| Pakpattan         | Sahiwal         | Rawalpindi     |
| Rahim Yar Khan    | Sargodha        | Sialkot        |
| Bahawalpur        | Kasur           | Lahore         |
| Jhang             | Hafizabad       |                |
|                   | Chakwal         |                |
|                   | Multan          |                |
|                   | Mandi Bahau Din |                |
|                   | Narowal         |                |
|                   | Sheikhupura     |                |

*Note:* In each category, districts are listed according to the magnitude of the overall Index of Multiple Deprivation in the descending order.

Table 5

*District Position in Overall Deprivation Level—Sindh*

| Deprivation Level |                |           |
|-------------------|----------------|-----------|
| High              | Medium         | Low       |
| Population Share  |                |           |
| 31 %              | 27 %           | 42%       |
| Tharparkar        | Dadu           | Hyderabad |
| Thatta            | Khairpur       | Karachi   |
| Badin             | Nawabshah      |           |
| Jacobabad         | Naushero Feroz |           |
| Ghotki            | Larkana        |           |
| Mirpurkhas        | Sukkur         |           |
| Sanghar           |                |           |
| Shikarpur         |                |           |

*Note:* In each category, districts are listed according to the magnitude of the overall Index of Multiple Deprivation in the descending order.

Table 6

*District Position in Overall Deprivation Level—NWFP*

| Deprivation Level |             |          |
|-------------------|-------------|----------|
| High              | Medium      | Low      |
| Population Share  |             |          |
| 51 %              | 38 %        | 11%      |
| Kohistan          | Swabi       | Peshawar |
| Shangla           | Laki Marwat |          |
| Batagram          | Bannu       |          |
| Upper Dir         | Kohat       |          |
| Buner             | Mardan      |          |
| Hangu             | Nowshera    |          |
| Chitral           | Abbotabad   |          |
| Tank              | Haripur     |          |
| D.I.Khan          |             |          |
| Lower Dir         |             |          |
| Swat              |             |          |
| Mansehra          |             |          |
| Karak             |             |          |
| Charsadda         |             |          |
| Malakand          |             |          |

*Note:* In each category, districts are listed according to the magnitude of the overall Index of Multiple Deprivation in the descending order.

Table 7

*District Position in Overall Deprivation Level—Balochistan*

| Deprivation Level |        |        |
|-------------------|--------|--------|
| High              | Medium | Low    |
| Population Share  |        |        |
| 88 %              | 1 %    | 11%    |
| Musa Khel         | Ziarat | Quetta |
| Kharan            |        |        |
| Kohlu             |        |        |
| Awaran            |        |        |
| Zhob              |        |        |
| Jhal Magsi        |        |        |
| Panjgur           |        |        |
| Khuzdar           |        |        |
| Dera Bugti        |        |        |
| Barkhan           |        |        |
| Nasirabad         |        |        |
| Killa Saifullah   |        |        |
| Killa Abdullah    |        |        |
| Bolan             |        |        |
| Mastung           |        |        |
| Chagai            |        |        |
| Lasbela           |        |        |
| Jafarabad         |        |        |
| Loralai           |        |        |
| Kalat             |        |        |
| Kech              |        |        |
| Gawadar           |        |        |
| Sibi              |        |        |
| Pishin            |        |        |

*Note:* In each category, districts are listed according to the magnitude of the overall Index of Multiple Deprivation in the descending order.

In Punjab province, the most deprived districts include, Rajanpur, Muzaffargarh, D.G. Khan, Layyah, Lodhran, Bhakkar, Pakpattan, Rahim Yar Khan, Bahawalpur, and Jhang. Districts like Attock, Toba Tek Singh, Gujrat, Faisalabad, Gujranwala, Rawalpindi, Sialkot, and Lahore have a combined share of 37 percent of Punjab's total population, but these are on the other extreme.

In Sindh, districts of Tharparkar, Thatta, Badin, Jacobabad, Ghotki, Mirpurkhas, Sanghar, and Shikarpur belong to high deprivation level and represent 31 percent of that province's population. Relatively better districts, consisting of medium level of deprivation, include Dadu, Khairpur, Nawabshah, Naushero Feroz, Larkana, and Sukkar. The districts in the low level of deprivation include Hyderabad

and Karachi. The share of these districts in the province's population is about 42 percent.

Districts like Swabi, Laki Marwat, Bannu, Kohat, Mardan, Nowshera, Abbotabad, and Haripur are in the category of medium level of deprivation. These districts comprise 38 percent of the NWFP population. About 51 percent of the population of the province resides in high deprivation areas of Kohistan, Shangla, Batagram, Upper Dir, Buner, Hangu, Chitral, Tank, D. I. Khan, Lower Dir, Swat, Mansehra, Karak, Charsadda, and Malakand districts. The remaining 11 percent of the population resides in Peshawar, which is in the low deprivation category.

Except for the districts of Quetta and Ziarat, all districts of Balochistan are in the lowest category of high level of deprivation. These districts contain 88 percent of the population share of the province.

## 5. CONCLUDING REMARKS

Geographical targeting may be a viable way to allocate resources for poverty alleviation in developing countries. Efficiency can be increased, and leakages to the non-poor substantially reduced, by targeting needy areas. A national and regional database of substantial poverty maps or deprivation indices are not readily available in Pakistan. Current poverty alleviation activities are *ad hoc* measures in the absence of identified pockets of poverty.

The main purpose of this study is to describe the overall picture of multiple deprivation, based on the combined education, health, housing quality, housing services, and employment sectoral indices. The overall Index of Multiple Deprivation can be used to make inter-district, intra-provincial and inter-provincial comparisons of populations that are deprived with respect to the indicators chosen for this analysis.

Maximum possible deprivation indicators have been derived from the Population and Housing Census report of districts. The UNDP methodology for constructing the Human Poverty Index is used in developing the multiple deprivation indices.

Possible applications of this exercise include identifying areas of need, making decisions on regional and sectoral priorities, facilitating targeted public interventions through special poverty alleviation programmes, understanding the relationship between poverty and its causes, and helping the federal and provincial governments in determining financial awards.

*Appendices*

Table A1

*Overall Deprivation Rank Orders—Punjab*

| Districts    | Provincial Rank Order                | National Rank Order                   | Deprivation Index |
|--------------|--------------------------------------|---------------------------------------|-------------------|
|              | 1=Least Deprived<br>34=Most Deprived | 1=Least Deprived<br>100=Most Deprived |                   |
| Attock       | 9                                    | 13                                    | 53.75             |
| Bahawalnagar | 24                                   | 43                                    | 64.14             |
| Bahawalpur   | 26                                   | 49                                    | 65.27             |
| Bhakkar      | 29                                   | 61                                    | 67.91             |
| Chakwal      | 14                                   | 19                                    | 56.89             |
| D.G. Khan    | 32                                   | 72                                    | 70.64             |
| Faisalabad   | 5                                    | 6                                     | 45.58             |
| Gujranwala   | 4                                    | 5                                     | 45.06             |
| Gujrat       | 6                                    | 8                                     | 46.47             |
| Hafizabad    | 15                                   | 22                                    | 58.13             |
| Jhang        | 25                                   | 46                                    | 64.62             |
| Jhelum       | 7                                    | 10                                    | 51.32             |
| Kasur        | 16                                   | 23                                    | 58.32             |
| Khanewal     | 23                                   | 41                                    | 63.95             |
| Khushab      | 19                                   | 32                                    | 61.53             |
| Lahore       | 1                                    | 2                                     | 34.34             |
| Layyah       | 31                                   | 68                                    | 69.14             |
| Lodhran      | 30                                   | 65                                    | 68.92             |
| M.B.Din      | 12                                   | 17                                    | 55.62             |
| Mianwali     | 22                                   | 36                                    | 62.32             |
| Multan       | 13                                   | 18                                    | 56.78             |
| Muzaffargarh | 33                                   | 73                                    | 70.75             |
| Narowal      | 11                                   | 16                                    | 54.87             |
| Okara        | 20                                   | 33                                    | 61.99             |
| Pakpattan    | 28                                   | 54                                    | 65.99             |
| R.Y. Khan    | 27                                   | 53                                    | 65.97             |
| Rajanpur     | 34                                   | 82                                    | 74.78             |
| Rawalpindi   | 3                                    | 4                                     | 41.03             |
| Sahiwal      | 18                                   | 30                                    | 61.31             |
| Sargodha     | 17                                   | 25                                    | 59.32             |
| Sheikhupura  | 10                                   | 14                                    | 53.85             |
| Sialkot      | 2                                    | 3                                     | 40.32             |
| T.T. Singh   | 8                                    | 11                                    | 52.82             |
| Vehari       | 21                                   | 34                                    | 62.09             |

Table A2

*Rural Deprivation Rank Orders— Punjab*

| Districts    | Provincial Rank Order                | National Rank Order                   | Deprivation Index |
|--------------|--------------------------------------|---------------------------------------|-------------------|
|              | 1=Least Deprived<br>34=Most Deprived | 1=Least Deprived<br>100=Most Deprived |                   |
| Attock       | 13                                   | 16                                    | 59.81             |
| Bahawalnagar | 23                                   | 44                                    | 68.53             |
| Bahawalpur   | 31                                   | 64                                    | 73.31             |
| Bhakkar      | 27                                   | 55                                    | 70.89             |
| Chakwal      | 11                                   | 14                                    | 58.93             |
| D.G. Khan    | 33                                   | 77                                    | 76.40             |
| Faisalabad   | 7                                    | 9                                     | 56.76             |
| Gujranwala   | 4                                    | 5                                     | 55.12             |
| Gujrat       | 2                                    | 3                                     | 53.01             |
| Hafizabad    | 14                                   | 20                                    | 61.84             |
| Jhang        | 25                                   | 51                                    | 69.99             |
| Jhelum       | 6                                    | 8                                     | 56.52             |
| Kasur        | 16                                   | 24                                    | 64.43             |
| Khanewal     | 22                                   | 42                                    | 68.28             |
| Khushab      | 18                                   | 29                                    | 64.96             |
| Lahore       | 3                                    | 4                                     | 53.66             |
| Layyah       | 29                                   | 61                                    | 72.24             |
| Lodhran      | 28                                   | 60                                    | 72.11             |
| M.B.Din      | 10                                   | 13                                    | 58.92             |
| Mianwali     | 17                                   | 27                                    | 64.82             |
| Multan       | 24                                   | 46                                    | 68.99             |
| Muzaffargarh | 32                                   | 72                                    | 75.46             |
| Narowal      | 8                                    | 10                                    | 57.20             |
| Okara        | 21                                   | 36                                    | 66.80             |
| Pakpattan    | 26                                   | 53                                    | 70.54             |
| R. Y. Khan   | 30                                   | 63                                    | 72.64             |
| Rajanpur     | 34                                   | 86                                    | 79.66             |
| Rawalpindi   | 9                                    | 12                                    | 58.49             |
| Sahiwal      | 19                                   | 31                                    | 65.30             |
| Sargodha     | 15                                   | 23                                    | 64.20             |
| Sheikhupura  | 12                                   | 15                                    | 59.68             |
| Sialkot      | 1                                    | 2                                     | 47.46             |
| T.T. Singh   | 5                                    | 7                                     | 56.02             |
| Vehari       | 20                                   | 34                                    | 66.04             |

Table A3

*Urban Deprivation Rank Orders—Punjab*

| Districts    | Provincial Rank Order                | National Rank Order                  | Deprivation Index |
|--------------|--------------------------------------|--------------------------------------|-------------------|
|              | 1=Least Deprived<br>34=Most Deprived | 1=Least Deprived<br>95=Most Deprived |                   |
| Attock       | 6                                    | 7                                    | 32.75             |
| Bahawalnagar | 23                                   | 36                                   | 45.13             |
| Bahawalpur   | 25                                   | 43                                   | 46.90             |
| Bhakkar      | 32                                   | 66                                   | 52.42             |
| Chakwal      | 13                                   | 19                                   | 41.90             |
| D.G. Khan    | 16                                   | 23                                   | 42.82             |
| Faisalabad   | 3                                    | 4                                    | 29.24             |
| Gujranwala   | 8                                    | 10                                   | 37.08             |
| Gujrat       | 2                                    | 3                                    | 28.72             |
| Hafizabad    | 19                                   | 30                                   | 44.02             |
| Jhang        | 22                                   | 34                                   | 44.83             |
| Jhelum       | 11                                   | 14                                   | 38.46             |
| Kasur        | 12                                   | 15                                   | 38.93             |
| Khanewal     | 26                                   | 45                                   | 47.16             |
| Khushab      | 27                                   | 49                                   | 48.55             |
| Lahore       | 5                                    | 6                                    | 31.38             |
| Layyah       | 31                                   | 62                                   | 51.91             |
| Lodhran      | 33                                   | 67                                   | 52.71             |
| M.B.Din      | 18                                   | 28                                   | 43.73             |
| Mianwali     | 30                                   | 60                                   | 50.99             |
| Multan       | 14                                   | 21                                   | 42.09             |
| Muzaffargarh | 28                                   | 51                                   | 48.80             |
| Narowal      | 7                                    | 8                                    | 36.43             |
| Okara        | 24                                   | 37                                   | 45.41             |
| Pakpattan    | 29                                   | 53                                   | 49.54             |
| R.Y. Khan    | 20                                   | 32                                   | 44.46             |
| Rajanpur     | 34                                   | 75                                   | 54.67             |
| Rawalpindi   | 4                                    | 5                                    | 30.08             |
| Sahiwal      | 17                                   | 27                                   | 43.60             |
| Sargodha     | 21                                   | 33                                   | 44.69             |
| Sheikhupura  | 9                                    | 11                                   | 37.28             |
| Sialkot      | 1                                    | 2                                    | 24.39             |
| T.T. Singh   | 10                                   | 12                                   | 37.92             |
| Vehari       | 15                                   | 22                                   | 42.40             |

Table A4

*Overall Deprivation Rank Orders—Sindh*

| Districts      | Provincial Rank Order                | National Rank Order                   | Deprivation Index |
|----------------|--------------------------------------|---------------------------------------|-------------------|
|                | 1=Least Deprived<br>16=Most Deprived | 1=Least Deprived<br>100=Most Deprived |                   |
| Badin          | 14                                   | 76                                    | 71.56             |
| Dadu           | 8                                    | 39                                    | 63.12             |
| Ghotki         | 12                                   | 59                                    | 67.70             |
| Hyderabad      | 2                                    | 12                                    | 53.20             |
| Jacobabad      | 13                                   | 63                                    | 68.16             |
| Karachi        | 1                                    | 1                                     | 24.59             |
| Khairpur       | 7                                    | 38                                    | 62.59             |
| Larkana        | 4                                    | 27                                    | 59.92             |
| Mirpurkhas     | 11                                   | 52                                    | 65.79             |
| Naushero Feroz | 5                                    | 28                                    | 60.39             |
| Nawabshah      | 6                                    | 29                                    | 60.44             |
| Sanghar        | 10                                   | 47                                    | 64.64             |
| Shikarpur      | 9                                    | 44                                    | 64.19             |
| Sukkur         | 3                                    | 21                                    | 57.99             |
| Tharparkar     | 16                                   | 84                                    | 75.44             |
| Thatta         | 15                                   | 78                                    | 72.74             |

Table A5

*Rural Deprivation Rank Orders—Sindh*

| Districts      | Provincial Rank Order                | National Rank Order                   | Deprivation Index |
|----------------|--------------------------------------|---------------------------------------|-------------------|
|                | 1=Least Deprived<br>16=Most Deprived | 1=Least Deprived<br>100=Most Deprived |                   |
| Badin          | 16                                   | 79                                    | 76.92             |
| Dadu           | 5                                    | 41                                    | 68.20             |
| Ghotki         | 12                                   | 68                                    | 73.99             |
| Hyderabad      | 7                                    | 48                                    | 69.42             |
| Jacobabad      | 13                                   | 73                                    | 75.50             |
| Karachi        | 1                                    | 1                                     | 42.36             |
| Khairpur       | 4                                    | 40                                    | 68.06             |
| Larkana        | 3                                    | 35                                    | 66.60             |
| Mirpurkhas     | 11                                   | 65                                    | 73.72             |
| Naushero Feroz | 2                                    | 28                                    | 64.92             |
| Nawabshah      | 8                                    | 50                                    | 69.64             |
| Sanghar        | 10                                   | 59                                    | 72.05             |
| Shikarpur      | 9                                    | 52                                    | 70.10             |
| Sukkur         | 6                                    | 47                                    | 69.32             |
| Tharparkar     | 14                                   | 75                                    | 76.29             |
| Thatta         | 15                                   | 76                                    | 76.39             |

Table A6

*Urban Deprivation Rank Orders—Sindh*

| Districts      | Provincial Rank Order                |  | National Rank Order                  |                      |
|----------------|--------------------------------------|--|--------------------------------------|----------------------|
|                | 1=Least Deprived<br>16=Most Deprived |  | 1=Least Deprived<br>95=Most Deprived | Deprivation<br>Index |
| Badin          | 16                                   |  | 59                                   | 50.71                |
| Dadu           | 11                                   |  | 48                                   | 48.32                |
| Ghotki         | 5                                    |  | 25                                   | 43.41                |
| Hyderabad      | 2                                    |  | 9                                    | 36.49                |
| Jacobabad      | 15                                   |  | 57                                   | 50.06                |
| Karachi        | 1                                    |  | 1                                    | 23.64                |
| Khairpur       | 12                                   |  | 52                                   | 49.38                |
| Larkana        | 9                                    |  | 42                                   | 46.76                |
| Mirpurkhas     | 6                                    |  | 31                                   | 44.06                |
| Naushero Feroz | 7                                    |  | 39                                   | 46.02                |
| Nawabshah      | 3                                    |  | 13                                   | 38.16                |
| Sanghar        | 4                                    |  | 17                                   | 40.94                |
| Shikarpur      | 10                                   |  | 47                                   | 48.20                |
| Sukkur         | 8                                    |  | 41                                   | 46.44                |
| Tharparkar     | 13                                   |  | 54                                   | 49.65                |
| Thatta         | 14                                   |  | 55                                   | 49.67                |

Table A7

*Overall Deprivation Rank Orders—NWFP*

| Districts   | Provincial Rank Order                |  | National Rank Order                   |                      |
|-------------|--------------------------------------|--|---------------------------------------|----------------------|
|             | 1=Least Deprived<br>24=Most Deprived |  | 1=Least Deprived<br>100=Most Deprived | Deprivation<br>Index |
| Abbotabad   | 3                                    |  | 20                                    | 57.54                |
| Bannu       | 7                                    |  | 37                                    | 62.44                |
| Batagram    | 22                                   |  | 90                                    | 77.96                |
| Buner       | 20                                   |  | 69                                    | 69.25                |
| Charsadda   | 11                                   |  | 50                                    | 65.65                |
| Chitral     | 18                                   |  | 66                                    | 69.02                |
| D.I.Khan    | 16                                   |  | 62                                    | 68.06                |
| Hangu       | 19                                   |  | 67                                    | 69.04                |
| Haripur     | 2                                    |  | 15                                    | 54.53                |
| Karak       | 12                                   |  | 51                                    | 65.66                |
| Kohat       | 6                                    |  | 35                                    | 62.14                |
| Kohistan    | 24                                   |  | 99                                    | 82.96                |
| Laki Marwat | 8                                    |  | 40                                    | 63.55                |
| Lower Dir   | 15                                   |  | 57                                    | 66.94                |
| Malakand    | 10                                   |  | 45                                    | 64.28                |
| Mansehra    | 13                                   |  | 55                                    | 66.07                |
| Mardan      | 5                                    |  | 31                                    | 61.37                |
| Nowshera    | 4                                    |  | 24                                    | 58.79                |
| Peshawar    | 1                                    |  | 9                                     | 50.78                |
| Shangla     | 23                                   |  | 91                                    | 78.59                |
| Swabi       | 9                                    |  | 42                                    | 64.10                |
| Swat        | 14                                   |  | 56                                    | 66.32                |
| Tank        | 17                                   |  | 64                                    | 68.48                |
| Upper Dir   | 21                                   |  | 81                                    | 74.64                |

Table A8

*Rural Deprivation Rank Orders—NWFP*

| Districts   | Provincial Rank Order                | National Rank Order                   | Deprivation Index |
|-------------|--------------------------------------|---------------------------------------|-------------------|
|             | 1=Least Deprived<br>24=Most Deprived | 1=Least Deprived<br>100=Most Deprived |                   |
| Abbotabad   | 3                                    | 19                                    | 61.75             |
| Bannu       | 5                                    | 22                                    | 63.81             |
| Batagram    | 22                                   | 84                                    | 78.28             |
| Buner       | 15                                   | 49                                    | 69.58             |
| Charsadda   | 13                                   | 43                                    | 68.37             |
| Chitral     | 18                                   | 57                                    | 71.11             |
| D.I.Khan    | 20                                   | 62                                    | 72.50             |
| Hangu       | 19                                   | 58                                    | 71.38             |
| Haripur     | 1                                    | 11                                    | 57.34             |
| Karak       | 12                                   | 39                                    | 68.03             |
| Kohat       | 17                                   | 56                                    | 71.00             |
| Kohistan    | 24                                   | 96                                    | 83.46             |
| Laki Marwat | 7                                    | 26                                    | 64.54             |
| Lower Dir   | 10                                   | 37                                    | 67.41             |
| Malakand    | 6                                    | 25                                    | 64.43             |
| Mansehra    | 11                                   | 38                                    | 67.79             |
| Mardan      | 8                                    | 30                                    | 65.04             |
| Nowshera    | 2                                    | 18                                    | 61.60             |
| Peshawar    | 4                                    | 21                                    | 63.53             |
| Shangla     | 23                                   | 85                                    | 78.87             |
| Swabi       | 9                                    | 33                                    | 65.68             |
| Swat        | 14                                   | 45                                    | 68.85             |
| Tank        | 16                                   | 54                                    | 70.77             |
| Upper Dir   | 21                                   | 74                                    | 75.56             |

Table A9

*Urban Deprivation Rank Orders—NWFP*

| Districts   | Provincial Rank Order                | National Rank Order                  | Deprivation Index |
|-------------|--------------------------------------|--------------------------------------|-------------------|
|             | 1=Least Deprived<br>20=Most Deprived | 1=Least Deprived<br>95=Most Deprived |                   |
| Abbotabad   | 6                                    | 38                                   | 45.81             |
| Bannu       | 8                                    | 56                                   | 50.02             |
| Batagram    | –                                    | –                                    | –                 |
| Buner       | –                                    | –                                    | –                 |
| Charsadda   | 13                                   | 70                                   | 53.93             |
| Chitral     | 9                                    | 58                                   | 50.09             |
| D.I.Khan    | 3                                    | 20                                   | 42.09             |
| Hangu       | 19                                   | 85                                   | 59.92             |
| Haripur     | 2                                    | 18                                   | 41.23             |
| Karak       | 15                                   | 76                                   | 55.59             |
| Kohat       | 5                                    | 29                                   | 43.93             |
| Kohistan    | –                                    | –                                    | –                 |
| Laki Marwat | 14                                   | 72                                   | 54.11             |
| Lower Dir   | 18                                   | 81                                   | 57.55             |
| Malakand    | 20                                   | 89                                   | 63.12             |
| Mansehra    | 4                                    | 24                                   | 43.32             |
| Mardan      | 7                                    | 50                                   | 48.74             |
| Nowshera    | 11                                   | 64                                   | 52.10             |
| Peshawar    | 1                                    | 16                                   | 39.01             |
| Shangla     | –                                    | –                                    | –                 |
| Swabi       | 16                                   | 78                                   | 56.53             |
| Swat        | 10                                   | 61                                   | 51.12             |
| Tank        | 17                                   | 80                                   | 57.35             |
| Upper Dir   | 12                                   | 65                                   | 52.34             |

Table A10

*Overall Deprivation Rank Orders—Balochistan*

| Districts       | Provincial Rank Order                | National Rank Order                   | Deprivation Index |
|-----------------|--------------------------------------|---------------------------------------|-------------------|
|                 | 1=Least Deprived<br>26=Most Deprived | 1=Least Deprived<br>100=Most Deprived |                   |
| Awaran          | 23                                   | 96                                    | 80.44             |
| Barkhan         | 17                                   | 88                                    | 76.69             |
| Bolan           | 13                                   | 83                                    | 75.03             |
| Chagai          | 11                                   | 79                                    | 72.81             |
| Dera Bugti      | 18                                   | 89                                    | 77.72             |
| Gawadar         | 5                                    | 60                                    | 67.80             |
| Jafarabad       | 9                                    | 75                                    | 71.37             |
| Jhal Magsi      | 21                                   | 94                                    | 79.25             |
| Kalat           | 7                                    | 71                                    | 70.52             |
| Kech            | 6                                    | 70                                    | 69.46             |
| Kharan          | 25                                   | 98                                    | 82.91             |
| Khuzdar         | 19                                   | 92                                    | 78.95             |
| Killa Abdullah  | 14                                   | 85                                    | 76.09             |
| Killa Saifullah | 15                                   | 86                                    | 76.20             |
| Kohlu           | 24                                   | 97                                    | 81.58             |
| Lasbela         | 10                                   | 77                                    | 71.60             |
| Loralai         | 8                                    | 74                                    | 70.77             |
| Mastung         | 12                                   | 80                                    | 73.48             |
| Musa Khel       | 26                                   | 100                                   | 89.06             |
| Nasirabad       | 16                                   | 87                                    | 76.66             |
| Panjgur         | 20                                   | 93                                    | 79.21             |
| Pishin          | 3                                    | 48                                    | 65.14             |
| Quetta          | 1                                    | 7                                     | 46.00             |
| Sibi            | 4                                    | 58                                    | 67.20             |
| Zhob            | 22                                   | 95                                    | 79.28             |
| Ziarat          | 2                                    | 26                                    | 59.80             |

Table A11

*Rural Deprivation Rank Orders—Balochistan*

| Districts       | Provincial Rank Order                | National Rank Order                   | Deprivation Index |
|-----------------|--------------------------------------|---------------------------------------|-------------------|
|                 | 1=Least Deprived<br>26=Most Deprived | 1=Least Deprived<br>100=Most Deprived |                   |
| Awaran          | 20                                   | 93                                    | 81.36             |
| Barkhan         | 13                                   | 83                                    | 78.18             |
| Bolan           | 11                                   | 81                                    | 77.45             |
| Chagai          | 9                                    | 78                                    | 76.50             |
| Dera Bugti      | 19                                   | 92                                    | 80.66             |
| Gawadar         | 14                                   | 87                                    | 79.74             |
| Jafarabad       | 6                                    | 69                                    | 74.08             |
| Jhal Magsi      | 18                                   | 91                                    | 80.61             |
| Kalat           | 7                                    | 70                                    | 74.10             |
| Kech            | 8                                    | 71                                    | 74.34             |
| Kharan          | 25                                   | 99                                    | 87.03             |
| Khuzdar         | 22                                   | 95                                    | 83.33             |
| Killa Abdullah  | 10                                   | 80                                    | 77.23             |
| Killa Saifullah | 15                                   | 88                                    | 79.86             |
| Kohlu           | 24                                   | 98                                    | 83.99             |
| Lasbela         | 21                                   | 94                                    | 81.39             |
| Loralai         | 4                                    | 66                                    | 73.74             |
| Mastung         | 12                                   | 82                                    | 77.48             |
| Musa Khel       | 26                                   | 100                                   | 90.52             |
| Nasirabad       | 16                                   | 89                                    | 80.22             |
| Panjgur         | 17                                   | 90                                    | 80.48             |
| Pishin          | 3                                    | 32                                    | 65.31             |
| Quetta          | 1                                    | 6                                     | 55.58             |
| Sibi            | 5                                    | 67                                    | 73.87             |
| Zhob            | 23                                   | 97                                    | 83.57             |
| Ziarat          | 2                                    | 17                                    | 60.12             |

Table A12

*Urban Deprivation Rank Orders—Balochistan*

| Districts       | Provincial Rank Order                | National Rank Order                  | Deprivation Index |
|-----------------|--------------------------------------|--------------------------------------|-------------------|
|                 | 1=Least Deprived<br>25=Most Deprived | 1=Least Deprived<br>95=Most Deprived |                   |
| Awaran          | –                                    | –                                    | –                 |
| Barkhan         | 13                                   | 79                                   | 56.82             |
| Bolan           | 17                                   | 86                                   | 61.42             |
| Chagai          | 9                                    | 71                                   | 54.11             |
| Dera Bugti      | 16                                   | 84                                   | 59.54             |
| Gawadar         | 14                                   | 82                                   | 57.82             |
| Jafarabad       | 15                                   | 83                                   | 58.51             |
| Jhal Magsi      | 19                                   | 88                                   | 63.08             |
| Kalat           | 2                                    | 35                                   | 45.08             |
| Kech            | 5                                    | 46                                   | 47.92             |
| Kharan          | 21                                   | 91                                   | 65.52             |
| Khuzdar         | 22                                   | 92                                   | 66.93             |
| Killa Abdullah  | 24                                   | 94                                   | 70.73             |
| Killa Saifullah | 6                                    | 63                                   | 52.04             |
| Kohlu           | 12                                   | 77                                   | 55.90             |
| Lasbela         | 8                                    | 69                                   | 53.75             |
| Loralai         | 3                                    | 40                                   | 46.22             |
| Mastung         | 7                                    | 68                                   | 53.60             |
| Musa Khel       | 25                                   | 95                                   | 78.54             |
| Nasirabad       | 18                                   | 87                                   | 62.19             |
| Panjgur         | 23                                   | 93                                   | 69.91             |
| Pishin          | 20                                   | 90                                   | 64.41             |
| Quetta          | 1                                    | 26                                   | 43.42             |
| Sibi            | 11                                   | 74                                   | 54.41             |
| Zhob            | 4                                    | 44                                   | 47.15             |
| Ziarat          | 10                                   | 73                                   | 54.36             |

Table A13

*Factor Analysis Generated Weights*

| Deprivation Indicators                                 | Overall | Rural | Urban |
|--|---------|-------|-------|
| <b>Education</b>                                       |         |       |       |
| Out of School Children (5-9 Years) – Male              | 0.26    | 0.26  | 0.25  |
| Out of School Children (5-9 Years) – Female            | 0.26    | 0.26  | 0.27  |
| Illiteracy Rate (10 years and above) – Male            | 0.23    | 0.23  | 0.22  |
| Illiteracy Rate (10 years and above) – Female          | 0.25    | 0.25  | 0.27  |
| <b>Housing Quality</b>                                 |         |       |       |
| Inadequate Material Used in Wall                       | 0.14    | 0.15  | 0.15  |
| Inadequate Material Used in Roof                       | 0.14    | 0.06  | 0.17  |
| Persons Per Room                                       | 0.04    | 0.11  | 0.03  |
| Housing Units with One Room                            | 0.05    | 0.16  | 0.02  |
| Percentage of Homeless Population                      | 0.03    | 0.03  | 0.08  |
| Percentage of Non-owners Households                    | 0.11    | 0.02  | 0.10  |
| Household with No Kitchen Facility                     | 0.18    | 0.18  | 0.15  |
| Households with No Bathroom Facility                   | 0.18    | 0.18  | 0.16  |
| Households with No Latrine Facility                    | 0.13    | 0.12  | 0.12  |
| <b>Housing Services</b>                                |         |       |       |
| Un-electrified Households                              | 0.28    | 0.27  | 0.41  |
| Households Not Using Cooking Gas                       | 0.35    | 0.33  | 0.25  |
| Households with No Inside Piped<br>Water Connection    | 0.37    | 0.40  | 0.34  |
| <b>Employment</b>                                      |         |       |       |
| Unemployment Rate (15–65 Years)                        | 0.50    | 0.50  | 0.50  |
| Employed Labour Force in Non-<br>manufacturing Sectors | 0.50    | 0.50  | 0.50  |

**REFERENCE**

UNDP (1997) *Human Development Report 1997*. New York: Oxford University Press.