Mapping the Spatial Deprivation of Pakistan

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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,

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;

IMD = Index of Multiple Deprivation
E = Index of Education Deprivation

HQ = Index of Deprivation in Housing Quality
HS = Index of Deprivation in Housing Services
L = Index of Deprivation in Employment
α = 3

The value of α has an important impact on the value of the index. If $\alpha=1$, the IMD is the average of its four sectors. As α rises, greater weight is assigned to the sector in which there is most deprivation. Following the UNDP, the value of α 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 | | | |
	High	Middle	Low	Total
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
All Areas			
Punjab	25	38	37
Sindh	31	27	42
NWFP	51	38	11
Balochistan	88	1	11
Rural Areas			
Punjab	26	27	47
Sindh	49	48	3
NWFP	25	48	27
Balochistan	89	7	4
Urban Areas			
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
Population Share		
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

High	Medium	Low
	Deprivation Level	
	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

High	Medium	Low
	Deprivation Level	
	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.

Table A1

Overall Deprivation Rank Orders—Punjab

Districts	Provincial Rank Order 1=Least Deprived 34=Most Deprived	National Rank Order 1=Least Deprived 100=Most Deprived	Deprivation Index
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 1=Least Deprived 34=Most Deprived	National Rank Order 1=Least Deprived 100=Most Deprived	Deprivation Index
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 1=Least Deprived 34=Most Deprived	National Rank Order 1=Least Deprived 95=Most Deprived	Deprivation Index
Attock	6	7	32.75
Bahawalnagar	23	36	45.13
Bahwalpur	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 1=Least Deprived 16=Most Deprived	National Rank Order 1=Least Deprived 100=Most Deprived	Deprivation Index
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 1=Least Deprived 16=Most Deprived	National Rank Order 1=Least Deprived 100=Most Deprived	Deprivation Index
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 1=Least Deprived 16=Most Deprived	National Rank Order 1=Least Deprived 95=Most Deprived	Deprivation 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 1=Least Deprived 24=Most Deprived	National Rank Order 1=Least Deprived 100=Most Deprived	Deprivation 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 1=Least Deprived 24=Most Deprived	National Rank Order 1=Least Deprived 100=Most Deprived	Deprivation Index
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 1=Least Deprived 20=Most Deprived	National Rank Order 1=Least Deprived 95=Most Deprived	Deprivation Index
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 1=Least Deprived 26=Most Deprived	National Rank Order 1=Least Deprived 100=Most Deprived	Deprivation Index
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 1=Least Deprived 26=Most Deprived	National Rank Order 1=Least Deprived 100=Most Deprived	Deprivation Index
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 1=Least Deprived 25=Most Deprived	National Rank Order 1=Least Deprived 95=Most Deprived	Deprivation Index
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
Education			
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
Housing Quality			
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
Housing Services			
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 Water Connection	0.37	0.40	0.34
Employment			
Unemployment Rate (15–65 Years)	0.50	0.50	0.50
Employed Labour Force in Non-manufacturing Sectors	0.50	0.50	0.50

REFERENCE

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