



Munich Personal RePEc Archive

Social Development Disparities among Districts of Punjab

Awan, Masood Sarwar and Aslam, Muhammad Amir and Waqas, Muhammad

Department of Economics University of Sargodha, Pakistan, Punjab Home Department, Pakistan

2012

Online at <https://mpra.ub.uni-muenchen.de/36846/>

MPRA Paper No. 36846, posted 22 Feb 2012 09:38 UTC

Social Development Disparities among Districts of Punjab

Masood Sarwar Awan

Assistant Professor, Department of Economics University of Sargodha, Pakistan
E-mail: awan811@hotmail.com

Muhammad Amir Aslam

Probation Officer, District Courts Sargodha. Punjab Home Department, Pakistan
E-mail: amir_aslam22@yahoo.com

Muhammad Waqas

Graduate Student, Department of Economics University of Sargodha, Pakistan
E-mail: economist147@hotmail.com

Abstract

Cessation of disparities and attainment of balanced development is conceived as the outline policy of every state. Therefore, this paper aims to expose inter-district gaps and disparities of Punjab. Drawing on the multidimensional nature of social development ranging from human development indicators of health, education and social services, this paper comparatively analyze the entire districts of Punjab, and rank them in social development index by using the factor analysis technique on the data set of Multiple Indicator Cluster Survey 2007-08 of Punjab. Inter-district comparison in 18 different domains of health, education, household services and child protection has been done.

Introduction

The experience of contacts and innovations enhances the capability of human being to gain control over material resources as well as boosts effective interaction and build up knowledge which is presently viewed as development. Development represents the general idea of progress in the fields of nations as it holds all the elements of betterment. Simply speaking, in this sense development is improvement or extensive achievements by emergence of new functions or performance of old functions in more accurate manner in the society. A basic perception associated with this term is adequate economic growth in the society, as it believes that economic growth is the main instrument to bring about the structural and functional changes in the individuals as well as society. Invariably growth engrossed the issue of development and treated as conjunct idea, which is true to some extent but there is a difference between growth and development. A society having the rapid growth but neglecting development remains at abate in the long run.

Growth can be viewed as the prerequisite of development as it is univariate notions primarily concerned with measuring gross domestic product while development is multivariate notions intensely tackling with progress, improvements, changes etc. Development is directly linked with calculation and redistribution of economic growth for human welfare, wellbeing and standard of living. These ideas took shape in the era of 1990s when United Nation Development Programme (UNDP) launched first Human Development Report having an explicit purpose. Conspicuously the report elaborates the concept of human development and gave fundamental articulation on the issue. It clearly states that “people are the real wealth of a nation. The objective of development is to create an enabling environment for people to live long, healthy and creative lives. This may appear to be a simple truth. But it is often forgotten in the immediate concern with the accumulation of commodities and financial wealth”¹. Haq (1995) elaborates this purpose more clearly by arguing that there is need to shift the focus of development economics from national income accounting to people centered policies. Sen (1999) argues, it would indicate that the connection tends to work particularly through public expenditure on health care, and through the success of poverty removal. The basic point is that the impact of economic growth depends much on how fruits of economic growth are used.

Research has brought marvelous changes in the world in the last few decades especially in the area of human development, living standard, quality of life and welfare. Accession of numerous development activists has always strengthened typical economic indices of wellbeing with alternative domains which can easily tempt non-economic and non-material domains of human life. Moreover, it is commonly accepted now, human well-being should be treated as a multidimensional concept along the lines advocated by (Sen, 1985, 1993; Stewart, 1985; Doyal and Gough, 1991; Ramsay, 1992; Cummins, 1996; Narayan *et al.* 2000; or Nussbaum, 2000;). This expansion in the idea of human development and wellbeing and the alliance of the economic and non-economic domains is known as social development. These non-economic objectives may include social justice, social freedom, democracy, peace, strong institutions, health & nutrition, developed infrastructure, and education & technology. Social development is a multi-disciplinary and cross-sectoral field of practice that seeks to improve the social and material well-being of individuals everywhere (Paiva, 1977; Jones, 1981; Meinert, 1987; Estes, 1990). According to Bilance (1997) social development is;

*“The promotion of a sustainable society that is worthy of human dignity by empowering marginalized groups, women and men, to undertake their own development, to improve their social and economic position and to acquire their rightful place in the society”*².

The term “social development” is difficult to comprehend as it is vaguest. Although the issue of social development is already explored broadly having akin traits but abridge explication is still lacking. More clearly the idea of social development can be viewed as dispensation of human-well being by the state. Social development aims to promote productive and healthy life for all with integration of society as well as nature. Social development is a practice encompassing the

¹ Human Development Report, UNDP 1990.

² Bilance, “A world in balance – Bilance stands for Social Development: Policy paper”. Oegstgeest, September 1997

commitment of individual welfare and empowering individuals to determine their own needs, to influence the decisions which affect them and incorporates communal interests in developing economic initiatives and policies. Social development especially targets disparities among the human being, minimize them and maximize human welfare. Eagerly discussion on the issue started in the 1960 but it does not mean that the issue was not in discussion before then. Outstanding participation of heads of state and Governments was first observed in history on the invitation of United Nations at World Summit for Social Development Copenhagen 1995, to recognize the significance of human well-being and social development for all. Social development is practiced across all geo-political borders and at all levels of social, political, and economic organization (Jones, 1981; Korten, 1990; Estes, 1993b).

Social Development in Pakistan

Pakistan is the sixth largest populated country in the world with 184.8 million³ people with an annual population growth rate of roughly 2% as of 2010 and ranks 125th of 169⁴ countries around the world. Pakistan is immersing with the curse of multifarious social, political and economic problems since its inception. Poverty along with internal and external political tensions, ethnicity, population growth and foreign debts has stuck the development and increases disparities in the country. Moreover, this situation gets worsen in current decade. Poverty has serving as first barrier to prosperity, growth and social development⁵. Feeding, clothing, housing, and maintaining the quality of life for this dense population is one of Pakistan's greatest challenges. A particularly troublesome challenge has been the uneven distribution. It abducts the rights and liberties of people and it results in a loss of dignity and injustice as well. Fight against poverty and issue of development has always remained on the agenda of the government. There has been a significant focus on poverty reduction through various development schemes and projects. Government of Punjab did not have a special poverty reduction programme as such in the past besides some developmental projects. This meant that while resources were spent on various poverty alleviation schemes and projects, there was no significant attention paid to the poor as the focal point in such programme⁶. Consequentially we neither had a proper data base on poverty nor were any assessments made of the projects and Programmes vis-à-vis their impact on the lives of the poor. Therefore, there is a need to develop social development index by considering income distribution as a separate variable in addition to other variables that are considered by international organizations as a mean of development in both fields i.e. social and human.

³ United Nations Population Fund, 2010

⁴ Human Development Index (HDI), Human Development Report 2010, UNDP.

⁵ Punjab-Poverty Reduction Strategy Paper (2003). Planning and Development Board, Government of Punjab

⁶ Punjab-Poverty Reduction Strategy Paper (2003). Planning and Development Board, Government of Punjab

Social Development Indicators

Generally speaking, we tabularize the countries into three dimensions; developed, developing and poor countries. This tabulated world is a result of an array of domains developed by the researchers for human well-being, representing multiple interests of human's as well as societies. Social Development is an encyclopedic issue concerned with the human/society well being. As we surmise the issue is multidimensional, consisting number of distinct and independent dimensions, it seems important to have looked over those domains which make it "multidimensional".

A glut of indexes exist which were and are used for the measurement of human well being, human development and social development. Keenly, United Nations Research Institute for Social Development (UNRISD) scrutinizes the issue of social development and developed the Level of Living Index (LLI) in 1966. Later on, UNRISD started campaign for holistic as well as multidisciplinary approach to social development and developed Socioeconomic Development Index (SID) in 1970 and General Index of Development (GID) in 1972. After this in 1979, Overseas Development Council introduced Physical Quality of Life index (PQLI) to measure the human well being besides the GNP. Population Crisis Committee in Washington DC again made the contribution and introduced International Human Suffering Index (HSI) in 1987. Subsequently, in 1990 United Nations Development Programme made contribution by developing a new index which exceptionally took the attention of the world namely Human Development Index (HDI). Booyesen (2002) reveals that internationally only 20 indexes gained attention in last four decades. Ray (2008) believes that only two indexes namely PQLI & HDI are the most admired measures of human well-being and development besides per capital income. The designers of these indices typically emphasize that there is more to well-being enhancement than material enrichment, and therefore often combine what might be loosely termed 'economic' and 'non-economic' well-being indicators. In some instances the indices are intended to serve as alternative or competing indices, to traditional income-based measures, and therefore include non-economic variables only.

Several studies in Pakistan ranked the districts of Pakistan in their own manners. This study serves as an attempt to extend the existing area of this research. Emphasis is given towards the use of a huge basket of indicators, suggested by UNDP and World Bank, for the social development ranking of the districts of Punjab. Education is the most important dimension in the construction of social development index. In literature, secondary enrolment rate for both male & female, literacy rate of male & female, and tertiary enrolment rate of male & female are used. The present study tried to extend this dimension by including other factors like physical access to primary school for boys and girls separately. In health dimension, previous studies include hospitals per 10,000 population, hospital beds per 10,000 population and patients treated per 1000. This present study extends this domain by adding certain factors like infant mortality rate and physical access to health facility. To determine the quality of life, the study by Afzal (2011) include percentage of household (HH) with 'Pakka' walls, percentage HH with inside water connections, Average HH size, percentage of HH with 'Pakka' roofs, and rooms per house. The present study used physical access to clean drinking water and a percentage of household have

improved in sanitation facilities, unemployment rate, child labour and knowledge about preventing HIV/AIDS.

Data Sources and Methodology

Factor analysis technique, the taxonomic distance technique and the Z-sum techniques are used for the development of social development index. Each technique has some plus as well as negative points. In Z-sum technique all the indicators are treated under equal weights, which is the most negative point of this method. The taxonomic distance technique also gives equal weights to all the indicators and secondly, this method is responsive to outlier and shows skewed order of rankings (Ghaus et al., 1996; Wasti and Siddiqui, 2008).

Factor analysis converts the correlated variables into a small numbers of uncorrelated factors, called principal components. This technique combined the data such that it is ordered around the covariance structures of the variables. The variations in the total sample elucidated by each factor are determined by Eigen values. It measures the collective percentage of variance in a variable. That's why factor analysis method is widely used to study the multi facet phenomena.

$$Z_i = \alpha_{i1} F_1 + \alpha_{i2} F_2 + \dots + \alpha_{ij} F_j \dots \dots (1)$$

Z_i is the i th indicator.

α_{ij} is called the factor loading and represents the proportion of the variation in Z_i which is accounted for by the j th factor.

$\sum \alpha_{ij}^2$ is called the communality and it is equivalent to the multiple regression coefficient in regression analysis.

F_j represents j th factor of component.

The components are produced in descending orders, in which first component is called principal component that shows maximum variation in data. The last component shows minimum variation in the data. Factors scores of each districts of Punjab are computed by utilizing factors loading of principal components.

$$(FS)_{kj} = \sum k \alpha_{ij} * Y_i \dots \dots (2)$$

FS_{kj} represents factor score of the k th country and the j th factor.

Y_i is the standardized value of the i th indicator.

α_{ij} is the factor loading of the j th factor and the i th indicator.

Now to compute the weighted scores, the eign values (e_{ij}), that captures the proportional variation in the data, is multiplied by factor scores. This process gives the weights to each factor according to their variation addition. This method is more superior than Z-sum method and the taxonomic distance method because it does not gives equal weights to all factors.

$$(WFS)_k = \sum k e_{ij} (FS)_{kj} \dots \dots (3)$$

Results and Discussion

Among the bunch of indicators in the filed, precisely eighteen indicators namely, Physical access to primary school (boys), Physical access to primary school (girls), Primary enrolment (girls), Primary enrolment (boys), Improved sanitation, Literacy rate (female), Secondary enrolment (female), Physical access to health facility, Unemployment rate, Child labour, Secondary enrolment (male), Literacy rate (male), Knowledge about HIV/AIDS, Infant mortality rate, Patients treated in hospitals, No. of beds in hospitals, Physical access to safe water and Safe drinking water has been included in this analysis as recommended by UNRISD and World Bank. All the decided variables has been again scattered down in four major factors. Before explicating the development index it is necessary to inspect the factors in detail.

Factor 1

Notably eight out of eighteen variables loads in first factor. Variables loaded in this factor are the most concerned indicators in terms of social development. In this factor the Toba Tek Singh is on the top and Jhelum is on second whereas, Layyah and Muzafargarh are at the end. Major indicators involved in this factor are concerned with physical access to social/basic services. Social development and accessibility are intertwined; it has been magnified by the programme of actions adopted after the world summit for social development in Copenhagen 1995. A number of researchers scrutinized the fact that distance is the basic element that impels service utilization in the developing world (Fredericksen 1964; Stock 1983; Müller et al. 1998; Buor 2002, 2003; Noor et al. 2003). Moreover, Rice et al. (2001) professes the fact that fair access to social services shares it roots in ensuring social justice.

Factor 2

Factor two conveys six indicators. This factor include Unemployment rate, Child labour, Secondary enrolment (male), Literacy rate (male), Knowledge about HIV/AIDS, and Infant mortality rate. It is by far the most important factor and includes most of the indicators from the educational sector. Gujrat, Chakwal and Jhelum are the first three top districts of Punjab in the second factor while, Kasur, Bahawalnagar and Faisalabad are the most deprived districts of Punjab. As such education can be interpreted as the most important service capturing variation in the level of social development. Besides this, awareness level about HIV and low infant mortality rate are both treated as core assumptions of human development and social well-being. Behrman *et al.* (2004) reveals the fact that infant mortality rate, is considered to be one of the strongest indicators of a country's wellbeing, as it reflects social, economic and environmental conditions in which children and others in society live, including their health care. Furthermore, reduction in mortality also has been ratified by numerous summits and conferences including World Summit for Children (1990), the International Conference on Population and Development (1994) the Fourth World Conference on Women (1995), the World Summit for Social Development (1995), and the United Nations Millennium Summit as the it has direct relation with social development. Simultaneously, child labor is another important variable affecting the process of development and growing rapidly in developing world because poor households cannot insure themselves adequately against income fluctuations (Guarcello *et al.* 2002; Grootaert *et al.* 1999; and Rena 2004).

Factor 3

Third factor conveys two indicators namely Patients treated in hospitals and No. of beds in hospitals. This factor generally depicts the health situation among districts. Lahore, Faisalabad and Rawalpindi are the first three top districts of Punjab. Rajanpur, Pakpattan and Attock are the most deprived districts of Punjab. Bloom *et al*, (2000) believes that improvements in population's health and availability of appropriate health services serves as virtuous cycle of poverty reduction, raising income and human well-being. Sen (2002) states that a country that pursue "growth-mediated" processes often finds that where inequalities in income persist, there is ultimately exacerbate inequalities in health.

Factor 4

Fourth factor comprises two indicators in which Physical access to safe water and Safe drinking water are loaded. Access to drinking water means that the source is less than one kilometer away from its place of use and that it is possible to reliably obtain at least 20 liters for an individual a day. Layyah, Gujranwala and Hafizabad are the first three top districts regarding safe water availability whereas, Rawalpindi is the most deprived district of Punjab. Rajanpur is at second number while, D.G. Khan is at third number. The Copenhagen Declaration (1995) on the Social Development stated that the root causes of poverty lies in unfulfilled basic needs, which includes the provision of safe drinking water and sanitation. The United Nations Committee on Economic, Social and Cultural Rights (Committee on ESCR) commented that the human right to water is indispensable for leading a life with human dignity. It also stated that water is a prerequisite for the realization of other human rights⁷.

Now by using the equation 3 we ranked the districts of Punjab. The WFS scores of districts investigates that Lahore, Sialkot, Gujranwala, Gujrat, Narowal are at first five top ranked districts respectively. Whereas, Rajanpur is at last number in terms of social development ranking. D.G. Khan is the second last most deprived district of Punjab whereas, R.Y. Khan and Bahawalnagar are third and fourth most deprived districts of Punjab respectively.

The purpose for checking the factor wise ranking of the districts is to see the sites , which factors contribute to it and how much contribution regarding social development index. As we discussed that this issue is multidimensional, consisting of numbers of distinct and independent dimensions, it seems important to look at those domains which makes it "multidimensional". In the first three factors, the Rawalpindi is amongst the top districts but in the fourth factor (which has indicators of safe drinking water) this is the most deprived districts. Emphasizes should be given to plan such policies which increase the most deprived factor in the districts.

In social development ranking, Gujranwala is at third position but factor wise ranking shows a very interesting situation about this district. This district is in better condition in all the factors except factor 2. Investment in the indicators which are in factor 2 will enhance the position of this district. Same is the case with Gujrat district, which is at fourth position in social development ranking. Among all the factors Gujrat is most deprived in factor 1 and 2. The

⁷ The Committee on ESCR exercises oversight over compliance with the International Covenant on Economic, Social and Cultural Rights of 1966. In General Comment No.15, (29th session, 2002) [UN Doc E/C.12/2002/11], para 1.

detailed factor wise description of the districts of Punjab are presented in graph 1&2 while, graph 3 shows the social development ranking by using social development index.

Conclusion and Policy Options

Several studies in Pakistan ranked the districts of Pakistan in their own manners. This study serves as an attempt to extend the existing area of this research. Emphasis is given towards the use of a huge basket of indicators, suggested by UNDP and World Bank, for the social development ranking of the districts of Punjab. The study employed eighteen indicators of health, education, household services and child protection. By utilizing the factor analysis method the study investigates that Lahore, Sialkot, Gujranwala, Gujrat, Narowal are at first five top districts. Whereas, Rajanpur is at last number in social development ranking. D.G. Khan is the second last most deprived district of Punjab whereas, R.Y. Khan and Bahawalnagar are third and fourth most deprived districts of Punjab respectively. The factor wise ranking shows that deprivation in one factor out of four, placing the districts in overall ranking. Simply speaking, some districts are at top in three factors but due to the poor condition in one factor they are at poor condition in overall social development ranking (e.g Rawalpindi). Emphasis should be given to plan such policies which increase the most deprived factor in the districts. Given the administrative structure at district and tehsil level and multiplicity in socio economic development in Punjab, and even all provinces of Pakistan, along with provincial level, this exercise must be practiced at district and even tehsil level. Successful social development strategies requires both that governing elites are committed to changing power structures in favor of the poor, and that citizens engage in policy making processes to combat these disparities.

References

- Afzal, Uzma. "The Changing Profile of Development: A Historical Study of the Punjab 1961–2008." Center for Research in Economics and Business Lahore School of Economics. 2010.
- Behrman, Jere R., Harold Alderman, and John Hoddinott. 2004. "Nutrition and Hunger." In *Global Crises, Global Solutions*, ed. Bjorn Lomborg. Cambridge, UK: Cambridge University Press.

Bloom, D. and D. Canning 2000. The Health and Wealth of Nations. *Science* 287(5456):1207-1209.

Booyesen, F. (2002). 'An Overview and Evaluation of Composite Indices of Development' *Social Indicators Research*, 59(2): 115–51.

Cummins, R. A., "Domains of Life Satisfaction: An Attempt to Order Chaos," *Social Indicators*

Doyal, L. and I. Gough, *A Theory of Human Need*, Macmillan, Basingstoke, 1991.

Estes, R. J. (1990). Development under different political and economic systems. *Social Development Issues*, 13(1), 5-19.

Estes, R. J. (1993b). Toward sustainable development: From theory to praxis. *Social Development Issues*, 15(3), 1-29.

European Economic Review 49 (2005): 909-938.

Ghaus, Aisha, Hafiz Pasha, and Rafia Ghaus. "Social Development Ranking of Districts of Pakistan." *The Pakistan Development Review* 35 (1996): 593-614.

Government of Pakistan. *Economic Survey of Pakistan 2007-2008*. Islamabad: Ministry of Finance.

Grootaert C and H. Patrinos. 1999. *Policy Analysis of Child Labor: A Comparative Study*. New York: St. Martin's, Press.

Guarcello L, F. Mealli and F Rosati. 2002. *Household Vulnerability and Child Labour, The Effect of Shocks, Credit Rationing and Insurance*, UCW paper Florence. (Available at: http://www.ucw-project.org/pdf/publications/standard_CL_and_Vulnerability.pdf ;Retrieved on 13th November 2008)

Haq, Mahbub ul. 1995. *Reflections on Human Development*. New York: Oxford University Press.

Jones, J. (1981). Can we teach social development in a social work curriculum? *International Social Work*, 24(4), 29-31.

Korten, D. C. (1990). *Getting to the 21st century: Voluntary action and the global agenda*. West Hartford, CT: Kumarian Press, Inc.

Meinert, R., & Kohn, J. (1987). Toward operationalization of social development concepts. *Social Development Issues*, 10(3), 4-18.

Narayan, D., R. Chambers, M. K. Shah, and P. Petesch, *Voices of the Poor: Crying Out for Change*, Oxford University Press for the World Bank, New York, 2000.

Nussbaum, M. C., *Women and Human Development: The Capabilities Approach*, Cambridge University Press, Cambridge, 2000.

Paiva, J. F. X. (1977, June). A conception of social development. *Social Service Review*, pp. 327-336.

Pakistan." Harvard Kennedy School Workshop on Analytical Growth Narratives, 2001.

Punjab." (2008).

Punjab-Poverty Reduction Strategy Paper (2003). Planning and Development Board, Government of Punjab.

Ramsay, M., *Human Needs and the Market*, Avebury, Aldershot, 1992.

- Ray, A.K. (2008) Measurement of social development: an international comparison. *Social Indicators Research*, 86: 1-46 DOI 10.1007/s11205-007-9097-3
- Rena, Ravinder. 2004. *Child Soldier in Armed Conflict*. Sumatera Utara, Indonesia: Kalingga, Pusat Kajian dan Perlindungan Anak (PKPA)/Center for Study and Child Protection, in collaboration with UNICEF,(September- October), pp.1-2.
- Research*, 38(3), 303–28, 1996.
- Sen, A. K., *Commodities and Capabilities*, Elsevier, Amsterdam, 1985.
- Sen, A.K. (1999). *Development as freedom*. Oxford University Press, USA.
- Sen, A.K. (2002). Why Health Equity? *Health Economics* 11: 659-666.
- Stewart, F., *Basic Needs in Developing Countries*, Johns Hopkins University Press, Baltimore, 1985.
- Wasti, Ashraf, and Minhaj Uddin Siddiqui. "Development Rank Ordering of Districts of Pakistan." *Pakistan Journal of Applied Economics* 18.1-2 (2008): 1-29. Print.

Table 1: Results of Factor Analysis

Variable	Factor 1	Factor 2	Factor 3	Factor 4	Communality
Physical access to primary school (boys)	.976	.041	.048	.000	.938
Physical access to primary school (girls)	.936	.206	.013	.060	.919
Primary enrolment (girls)	.749	.550	.236	0.59	.923
Primary enrolment (boys)	.699	.564	.143	.114	.840

Improved sanitation	.687	.371	.496	.122	.869
Literacy rate (female)	.659	.546	.460	.013	.944
Secondary enrolment (female)	.641	.605	.380	0.87	.928
Physical access to health facility	.558	.385	.468	.124	.693
Unemployment rate	.258	.844	.044	.161	.806
Child labour	.026	.751	.100	0.30	.576
Secondary enrolment (male)	.591	.693	.254	.171	.923
Literacy rate (male)	.547	.686	.289	.101	.894
Knowledge about HIV/AIDS	.342	.676	.439	.237	.823
Infant mortality rate	.403	.640	.325	.103	.688
Patients treated in hospitals	.017	.041	.934	.164	.901
No. of beds in hospitals.	.071	.056	.096	.061	.891
Physical access to safe water	.061	.056	.049	.976	.942
Safe drinking water	.022	.184	.096	.939	.924
Eigen values					

Table 2: Scores of Districts, Factor wise and Overall									
Districts	Factor 1	Districts	Factor 2	Districts	Factor 3	Districts	Factor 4	Districts	DI
Muzaffargarh	-2.40966	Kasur	-1.94231	Rajapur	-1.50283	Rawalpindi	-2.16347	Rajapur	-5.8428
Layyah	-1.77026	bahawalnagar	-1.58033	Pakpattan	-1.26428	Rajapur	-2.02671	D.G.Khan	4.29472
bahawalpur	-1.59557	Faisalabad	-1.27761	Attock	-1.12663	D.G.Khan	-1.96422	R.Y.Khan	2.43797
D.G.Khan	-1.50435	R.Y.Khan	-1.13549	M.Baha-ud-Din	-0.83119	Chakwal	-1.73513	bahawalnagar	2.01069
Jhang	-1.31813	Rajapur	-1.12346	Nankana Sahib	-0.77724	Faisalabad	-1.46068	Lodhran	-1.9251
Rajapur	-1.18981	Toba Tek Singh	-1.0548	Bhakkar	-0.68141	Sargodha	-0.90879	Pakpattan	1.84651
R.Y.Khan	-1.17261	Pakpattan	-0.8732	Mianwali	-0.66602	Jhelum	-0.87307	bahawalpur	1.23305
Khushab	-0.87962	Lodhran	-0.87269	Lodhran	-0.64889	Khushab	-0.86853	Khushab	1.14647
Multan	-0.83786	Sahiwal	-0.84387	Vehari	-0.61569	Attock	-0.85572	Kasur	1.03449
Lodhran	-0.65776	bahawalpur	-0.75491	Khushab	-0.54748	R.Y.Khan	-0.57906	Muzaffargarh	0.85098
Bhakkar	-0.58189	Khanewal	-0.73556	Narowal	-0.53451	bahawalnagar	-0.48171	Okara	0.82045
Lahore	-0.35807	Nankana Sahib	-0.57235	Khanewal	-0.51479	Gujrat	-0.2018	Sargodha	0.63529
Okara	-0.33724	D.G.Khan	-0.46854	Jhelum	-0.50655	Toba Tek Singh	-0.1493	Mianwali	-0.4241
Mianwali	-0.23444	Vehari	-0.26007	Layyah	-0.37693	Okara	-0.06699	Jhang	-0.3421
Pakpattan	0.16608	Sheikhpura	-0.21048	D.G.Khan	-0.35761	Kasur	0.00972	Attock	0.18584
Gujrat	0.2332	Sargodha	-0.20861	Hafizabad	-0.32446	Pakpattan	0.12488	Nankana Sahib	-

									0.16384
									-
Kasur	0.26884	Okara	-0.163	Chakwal	-0.25763	Mianwali	0.17141	Khanewal	0.15535
bahawalnagar	0.28009	Hafizabad	-0.10737	Okara	-0.25322	bahawalpur	0.22398	Bhakkar	0.13817
Vehari	0.2944	Jhang	0.01828	bahawalnagar	-0.22874	Lodhran	0.25422	Vehari	0.24667
Sargodha	0.31497	M.Baha-ud-Din	0.07974	Sheikhpura	-0.16927	Nankana Sahib	0.26403	Layyah	0.28725
Rawalpindi	0.34865	Gujranwala	0.12791	Toba Tek Singh	0.01795	Khanewal	0.42213	Toba Tek Singh	0.35333
Sheikhpura	0.63691	Narowal	0.29319	Gujrat	0.12676	Sahiwal	0.60126	Chakwal	0.54054
Khanewal	0.67288	Mianwali	0.30495	Sargodha	0.16713	Jhang	0.72977	Faisalabad	0.7402
Chakwal	0.69429	Muzaffargarh	0.32772	Multan	0.17827	Sheikhpura	0.8203	Sahiwal	1.01741
Hafizabad	0.73736	Bhakkar	0.3822	Jhang	0.22798	Vehari	0.82804	Sheikhpura	1.07746
Sahiwal	0.87615	Lahore	0.54895	Muzaffargarh	0.2328	Sialkot	0.85776	Jhelum	1.12272
Attock	0.87733	Multan	0.86538	Sialkot	0.35812	M.Baha-ud-Din	0.91636	Multan	1.15895
Faisalabad	0.89917	Attock	0.91917	Sahiwal	0.38387	Narowal	0.9353	M.Baha-ud-Din	1.16936
Nankana Sahib	0.92173	Sialkot	1.05038	R.Y.Khan	0.44919	Lahore	0.9355	Rawalpindi	1.17392
Sialkot	0.94343	Khushab	1.14917	Kasur	0.62926	Multan	0.95316	Hafizabad	1.34734
M.Baha-ud-Din	1.00445	Layyah	1.28371	Gujranwala	0.8611	Muzaffargarh	0.99816	Narowal	1.81286
Gujranwala	1.0047	Rawalpindi	1.45488	bahawalpur	0.89345	Bhakkar	1.01927	Gujrat	2.21013
Jhelum	1.01427	Jhelum	1.48806	Rawalpindi	1.53387	Hafizabad	1.04181	Gujranwala	3.07109
Narowal	1.11888	Chakwal	1.839	Faisalabad	2.57932	Gujranwala	1.07737	Sialkot	3.20969
Toba Tek Singh	1.53948	Gujrat	2.05196	Lahore	3.54628	Layyah	1.15073	Lahore	4.67266

