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Population and Environment Relationship:An Empirical Review with Respect to Pakistan

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Abstract
This study aims to discuss the components of population and causes and effects of overpopulation, on the economic development and environmental degradation. The data from 1947 to 2010 has been taken from different sources. The methodology used in this work is an ADF test; OLS is used to check the relationship between dependent and independent variables. Using above techniques, the result of our study shows that there is upward trend found in temperature in almost all cities which is the proof that global warming affects Pakistan significantly. Urbanization takes place very quickly in Pakistan which is one of the major causes of environmental degradation. There are significant changes found in rainfall in different cities of Pakistan which cause severe environmental changes. There is found bi-causality between population and environment, overpopulation causes severe environmental degradation and this degradation of the environment affects population drastically.
Keywords: Population, Environment, Temperature, Rainfall, Multivariate Analysis

1. Introduction

This study focuses on a very pivotal social issue "Population and Environment Study through Multivariate Analysis". It is noted that Population is a major source of environmental pollution on the whole planet, both in developed and underdeveloped nations. Population is a visible and prominent feature of environmental pollution. The population generally (causes transportation system, industry, solid and liquid waste and mighty environmental producing objects such as heavy vehicles, trains and jets.) All above define problems that cause global warming which ultimately causes reduction in rainfall and drastically change in temperature. Environmental degradation causes irritation, and human beings' social behavior is affected by environment. This study discloses that the consistent exposure to polluted environment can reason a lot of health matters.

The interfaces between the environment and human population dynamics have frequently been sighted mechanistically. This explains the complications of environment-population associations in an amount of domains. It discovers the means where social scientists and demographers have required to realize the associations between environmental dynamics changes and a complete series of population dynamics (for example, population volume, population density, population growth, sex as well as age composition of population, population vital rates, urbanization, migration). The section momentarily evaluates an amount of the theories in support of indulgent the environment and population and after that continue to give a modern evaluation of research that have observed the environmental issue area and their association to populace dynamics. The evaluation brings to a close by connecting environment-population study to rising work on environment-human systems.

Individuals are required to realize the association between environmental and population dynamics as the earliest times (Petersen (1972), Cohen (1995)), however; it is "Essay on the Principle of Population (Malthus (1798))" of Thomas Malthus (1798) that has initiated the study of resources and population like a systematic issue of examination. According to Malthus, food production rises linearly whereas populace quantity has a tendency to breed exponentially, never rather remaining speed with populace and therefore consequential in usual "checks" (for example food shortages) two additional expansion. While the topic was occasionally taken up over in the make sure decades, through such as "classic Man and Nature (1864)" of George Perkins Marsh (1864) and apprehension over human-persuaded soil exhaustion in regal Africa (Lindblade (1996), Tiffen (1994)), it was not in anticipation of the 60s that considerable study interest was regenerated. The United States N.A.S. published "The Growth of World Population", in 1963, details that imitated systematic concern regarding the cost of worldwide growth of population, which was then reaching its peak at/with annual rate of two percent. In 1968, Paul Ehrlich published The Population Bomb, which focused public attention on the issue of population growth, production of food, as well as the environment. Near 1972, the Rome Club had liberated its global Model, which symbolized the 1st computerized environment-population modeling attempt, forecasting an "overrun" of worldwide bearing competence in one century.

Obviously, attempts to realize the association between ecological changes and demographic changes are elements of an esteemed custom. Up till now, in the same way, it is a custom that has frequently required decreasing ecological change to a simple function of growth or the size of the populace. Certainly, an overlay of

diagrams representing worldwide movements within populace, consumption of energy, (CO_2) emissions of carbon dioxide, deposition of nitrogen, or deforestation of land area has frequently been accustomed to show the effect that the populace has over the environment. While we begin as of the ground that populace dynamics do certainly have an effect over the environment, we as well consider that menopausal clarifications of environmental transform that provide an outstanding position to the growth and size of the population experience as of three main deficiencies: They generalize a multifaceted actuality, they frequently elevate additional queries than they reply, and they might in a few examples/cases still give the incorrect responses.

1.1 Focus of study:

The study focuses on the components of population and causes of over population, effects of population growth on the economic development environmental degradation.

1.2 Hypothesis of study:

1. Condition of environment is likely to be related with the rate of population growth.
2. Higher the population growth rate lesser the condition of environment.
3. Population growth rate damages condition of environment.
4. Lower population rate so better for environmental development.

2. Review of the literature

As the pasture of population-environment works has established, social scientists increasingly have required realizing the degrees of the association. Formerly two decades ago, environmental scientists, economists, anthropologists, demographers, and geographers have required replying an extra difficult set of queries, which contain among others:

- How does particular populace transform (in numbers, density, or composition) (and/or) transmit to particular transforms in the environment (for example water pollutants, ambient concentrations of air, or climate change and deforestation,)?
- How do ecological circumstances and transforms, sequentially, have an effect on populace dynamics? How do dominant variables, for example organizations or marketplaces, arbitrate the association?
- And how do these relations differ in space and time?

They have required answering these queries supported through a multitude of innovative instruments and by developing theories on environmental-human interfaces.

This evaluation discovers the methods wherein social scientists have required understanding the relations amongst a complete variety of dynamics of the population (for example, size of population, the growth of population, density of population, sex and age composition of population, migration of population, urbanization of population, vital rates of population) and ecological transforms. By the exclusion of the energy section, the focal point is mostly on micro-macro scale studies in the building up globe. This is not as these dynamics are insignificant in the developed world—quite the opposite, environmental per person effects are extremely superior in this area—however somewhat as this is where a lot of the study has centered (Curran (2004)). Researcher reviewed a large collection of texts with a stress on peer-reviewed research works as of the preceding decade, although given the absolute outburst in environment-population studies; we rush to adjoin that this evaluation simply gives an example of the mainly prominent conclusion. The study begins with a small evaluation of the theories for/to considerate the environment and population. After that it continues to give a state-of-the-art evaluation of research that has inspected populace dynamics with their association to the subsequent ecological matter areas: deforestation and land-cover change; farming land deprivation and development; generalization and pollution of water reserves; marine and coastal environments; and power, pollution of air, and change of climate. In the finishing segment, we transmit environment-population studies to the upcoming perceptive of composite environment-human systems.

At the worldwide stage, the study has established that the two main drivers of humankind's environmental track are consumption and population (Dietz (2007)); hence we give a short preface to the trends and rank in these two signs.

Customer tendencies are rather more difficult to forecast since they depend more seriously on populace ledges than the worldwide economical circumstances, attempts to follow the sustainable improvement, and prospective responses as of the ecological structures upon which the worldwide economies depend for reserves and descends. However; numerous pointers of expenditure have grown at a pace well over populace growth in the last century: worldwide Gross Domestic Product is 22 times above it was in 19 century, having growth at a pace of 2.7 percent annually (Alcamo (2005)); carbon dioxide discharges have grown at yearly pace of 3.5 percent as in 19 century, accomplishment an record elevated of 1 billion metric tons of carbon during 2001 (Marland (2006)); and the environmental track, a compound determinant of consumption calculated in hectares

of physically useful soil, raised from 4.6 to 14.2 billion hectares between 1961 and 2010, in addition to it is currently 25 percent higher than "biocapacity" of world in line with Hails (Hails C, (2006)). In the case of carbon dioxide discharges, per person effects of higher-earning nations are at present 7-11 times more than those in lower-earning nations. As far as the future is concerned, excepting main strategy transforms or economical recessions, there is no basis to suppose that expenditure tendencies will alter considerably in the close time. Long-run estimations propose that growth rates of economies will turn down before 2050 due to a reduction in population growth, dispersion of expenditure, and deliberately low technical transform (Alcamo J (2005)).

The end result of this data shows the most influence variables are average vehicles and rainfall which is establish or founded on environment population growth rate extensively or directly and the average temperature illustrating negative relationship or not relevant impact on population growth rate.

The conclusion with the support of environment: The results of the research illustrates that in this data the most influence variables are average rainfall and vehicles which derived from environment against population growth rate considerably and directly and the average temperature showing negative relationship or not relevant effect on population growth rate. Consequently, the consequences conclude that the situation of environment is expected to be connected with the rate of the population growth, due to the average temperature with the base of environment inverse impact on population growth rate.

3. Methodology

Unit Root Test:

"A test of stationarity that has become widely popular over the past several years is the unit root test. We first explain it, then illustrate it and then consider some limitations of this test.

The Augmented Dickey-Fuller (ADF) Test

It was assumed that the error term u_t was uncorrelated. But in case they u_t are correlated, Dickey and Fuller have developed a test, known as the augmented Dickey-Fuller (ADF) test. This test is conducted by "augmenting" the preceding three equations by adding the lagged values of the dependent variable ΔY_t. The ADF test here consists of estimating the following regression:

$$\Delta Y_t = \beta_1 + \beta_2 t + \delta Y_{t-1} + \alpha_i \sum_{i=1}^{m} \Delta Y_{t-i} + \varepsilon_t \qquad \ldots\ldots\ldots\ldots\ldots\ldots (5)$$

Where ε_t a pure white environmental e, etc. is term and where $\Delta Y_{t-1} = (Y_{t-1} - Y_{t-2})$, $\Delta Y_{t-2} = (Y_{t-2} - Y_{t-3})$, etc. The numbers of lagged different terms to include enough, so that the error term in (5) is serially uncorrelated. In ADF we still whether $\delta = 0$ and the ADF follows the same asymptotic distribution as the DF statistic, so the some critical values can be used.

Ordinary Least Squares (OLS)

The method of Ordinary Least Squares (OLS) is attributed to Carl Friedrich Gauss, a German mathematician. Under certain assumptions the method of least squares has some very attractive statistical properties that have made it one of the most powerful and popular methods of regression analysis.

Here we describe the use of the basic regression technique in E-views: specifying and estimating a regression model, performing simple diagnostic analysis, and using our estimation results in further analysis."

4. Empirical Analysis

Analysis of Rain Fall Data

Our empirical discussion starts from descriptive statistics and correlation matrix. The results are reported in Table 1 (a) and in Table 1 (b).

The results specify that all the series have been normally distributed. The mean and variance is constant of the residual terms of the series. In case of Pakistan, the correlation matrix reveals that:

The next step is to test the unit root properties of female labor force participation and economic development, in doing so we have applied ADF (Dickey and Fuller, 1979). If any variable is found to be stationary beyond that order of integration, then process OLS Estimation becomes unusable. Just to ensure that none of the variables are stationary at 1st and 2nd difference. The results of ADF unit root tests are detailed in Table 2.

In this section the results of unit root test are interpreted. The annual data from 1971-2010 is used. The variables used in the model are HYDRA, ISBDRA, KARA, MULRA, MRERA, PESRA and QUERA. In order to estimate the model; first the stationary of data is checked. For this purpose ADF (augmented Dickey-Fuller) test is used because DF test is based on AR (1) process, while ADF test considers extra lagged terms of the dependent variable in order to eliminate the auto correlation. We test the null hypothesis of a unit root against the alternative of no unit root at a level and 1st difference.

The results indicate that HYDRA, ISBDRA, KARA, MULRA, MRERA, PESRA and QUERA have no unit root problem at level with constant and trend. Series are stationary at level indicated by statistics of the ADF unit root test. This demonstrates that the series has the same order of integrated i.e. (0).

We reject the null hypothesis of a unit root at the level. Results show that all the variables are significant at 1% critical value.

In order to estimate the model the OLS framework was applied. The specification equation followed:

Explanation

The following table depicts the trend of the Temperature of the Major seven cities of Pakistan the name of the cities is as follows:

1) Hyderabad
2) Islamabad
3) Karachi
4) Multan
5) Murray
6) Peshawar
7) Quetta

In table 3 simple Ordinary Least Square (OLS) is used to run the model [City rain = f (years)]. The rain fall measured in millimeter. The data span from 1971 to 2010. Thirty observations are quiet enough to run the OLS model.

Explanation

The following table depicts the trend of the Temperature of the Major seven cities of Pakistan the name of the cities is as follows:

1) Jacobabad
2) Lahore
3) Multan
4) Peshawar
5) Quetta
6) Rawalpindi

In table 4 simple Ordinary Least Square (OLS) is used to run the model [City temperature = f (years)]. There are three categories of temperature is used in above model which are Maximum Temperature (Max), Minimum temperature (Min) and the difference of Maximum Temperature (Max) and Minimum temperature (Min) (Max - Min). The data span from 1947 to 2010. Sixty four observations are quiet enough to run the OLS model.

5. Conclusion

Because Pakistan is a developing country so Pakistan also faces the same problems as other country faced. The population of Pakistan now touches the figure of 190 million and land is a scare resource as population increases it ultimately creates a huge burden on the environment. And there is no as such effort made to recover environment.

Our empirical results also confirm that as population increase it damage the environment very badly. There are two resources of rain in Pakistan, the western Depression and the torrential rain. Jul-Sep is the torrential rain phase. The western Depression carries rainfall first and foremost from Dec to Mar. In the overruling phase, Oct, Nov and Apr-Jun a little magnitude of precipitation arrives from thunderstorms.

Empirical work start with the analysis of rainfall data, the descriptive statistics of the rainfall data shows that all series are normally distributed. The data are collected from Hyderabad, Islamabad, Karachi, Multan, Murre, Peshawar and Quetta. The average rain (in millimeter) is these cities are 155.16, 1255.73, 183.03, 214.62, 1876.83, 440.73 and 284.2 respectively. And this data is stationary at level so there is no need to apply any other method other than OLS. OLS results show that as time passes population grow at an average rate is 2.2 and it's significantly impact the rain fall off above define cities. Enhancement of population causes global warming which impact rainfall significantly. Changes in rainfall also reason changes in the environment.

The second type of analysis we perform on the temperature data collected from Jacobabad, Lahore, Multan, Peshawar, Quetta and Rawalpindi stations. The data span from 1947 to 2010. Sixty four observations were quiet enough to run the OLS model. The average maximum temperature (in centigrade) is these cities are 34.25840, 30.90571, 32.83002, 29.53507, 24.35514 and 28.63629 respectively. And this data is also stationary at level so there is no require employing some other method except OLS. OLS results show that as time passes population grow and it's significantly impact the temperature of above describe cities. Increase in population origin of global warming which affect the temperature significantly. Changes in the temperature also reason changes in the environment.

The conclusion of this data the most influence variables are averages rainfall and vehicles which determine or based on environment pop grow rate significantly or positively and the average temperature

showing the negative relationship or not relevant impact on population growth rate .
The conclusion with the base of environment: The outcomes of the study illustrate that in this data the most influence variables are averages rainfall and vehicles which based on environment against population growth rate significantly or positively and the average temperature showing the negative relationship or not relevant impact on population growth rate. Therefore the result concludes that the condition of environment is likely to be related to the rate of the population growth. Due to average temperature, with the base of environment have inverse impact on population growth rate.

References

Petersen W, (1972) *Readings in Population*, New York: Macmillan
Cohen JE. (1995) How Many People Can The Earth Support? New York: Norton. This is a highly readable, critical assessment of the widely varying estimates of Earth's carrying capacity
Malthus TR. (1798), An Essay on the Principle of Population as It Affects the Future Improvement of Society. London: Johnson
Marsh GP. (1864), Man and Nature: or, Physical Geography as Modified by Human Action. New York: Scribner
Lindblade K, Tumuhairwe JK, Carswell G, Nkwiine C, Bwamiki D. (1996), More people, more fallow: environmentally favorable land-use change in southwestern Uganda.Rep Rockefeller Found/CARE Int.
Tiffen M, Mortimore M, Gichuki F. (1994) More People Less Erosion: Environmental Recovery in Kenya. Chichester, UK: Wiley
Natl. Acad. Sci. (1963), The Growth of World Population. Washington, DC: Natl. Acad. Sci.
Ehrlich PR. (1968) The Population Bomb. New York: Ballantine Books
Meadows DH, Meadows DL, Randers J, Behrens WW (1972) The Limits to Growth: A Report for the Club of Rome's Project on the Predicament of Mankind. New York: Universe Books
Curran S, de Sherbinin A. (2004) Completing the picture: the challenges of bringing 'consumption' into the population-environment equation Popul Environ. 26(2):107–31
Dietz T, Rosa EA, York R. (2007) Driving the human ecological footprint Front Ecol Environ 5(1):13–18
United Nations (2007) World Population Prospects: The 2006 Revision Highlights. New York: UN
United Nations, United Nations Millennium Declaration (2000) General Assembly resolution 55/2, Sept. 8
Alcamo J, van Vuuren D, Cramer W, Alder J, Bennett E, et al. (2005) Changes in ecosystem services and their drivers across the scenarios. In: Carpenter SR, Pingali PL, Bennett EM, Zurek MB, editors. Ecosystems and Human Well-being: Scenarios. Washington, DC: Island. pp. 297–373
Federal bureau of Statistics, Statistics Division Govt. of Pakistan (2003) "Pakistan Statistical Year Book"
Federal Bureau of Statistics, Statistics Division Govt. of Pakistan "Pakistan 2000, An official Hand Book on Statistics"
Government of Pakistan Finance Division Economic, Advisor's Wing "*Economic Survey of Pakistan 2002-2003*"
Population Govt. Census Organization, "Population of census of Pakistan 1972" *Ministry of foreign Interior states census*
UNESCO "Population Education: a contemporary concern" *(Paris, UNESCO 1978)*
UNESCO, "Population growth and costs of Education in developing countries" *(Paris, UNESCO)*
Petersen William, "*Population III rd Edition*" (*Newyork, McMillian* Publishing Company)
S. Chander Shekar "Population and Planned Parenthood in India." *(London, George Allen and Irwin, 1955)*
Dyer, Colin "Pakistan Population and society in 20th Century" *(London Hadder and Stoughton, 1978)*
UNESCO "Population Environmental relations tropical Islands: the case of UNESCO, eastern Fiji". (Paris, UNESCO 1980)
Akhtan Hussain Khan "Population Censes of Pakistan 1972 Statistical Report of Sindh" *Islamabad, Population Census Organization, Statistical Division*
Carl Haub, "2002 World Population Data Sheet" *Population Reference Bureau*, U.S.A
Brian o'Neill and Deborah Balk, "World Population Futures" *Population Reference Bureau, U.S.A*
Federal Bureau of Statistics, "Environment Statistics of Pakistan" *Statistics Division , Govt. of Pakistan*
UNESCO "Environmental Effects on Arid Land Irrigation in Developing Countries" *Paris, UNESCO 1978*
Federal Bureau of Statistics Division Karachi, (1984) "Environmental Statistics of Pakistan" *Manager Publishers*

Table 1 (a) Descriptive Statistics:

	HYDRA	ISBDRA	KARA	MULRA	MRERA	PESRA	QUERA
Mean	155.16	1255.73	183.03	214.62	1876.83	440.73	284.2
Median	118	1214.5	160.6	212.45	1854.1	417	244.35
Maximum	487	1735	488.5	513.2	2433.8	728	949.8
Minimum	9	830	0	83	1264.4	190	106
Std. Dev.	132.489	280.365	138.608	96.6946	316.031	140.142	165.485
Skewness	0.9872	0.33861	0.71049	1.02174	-0.02564	0.41001	2.46943
Kurtosis	3.08743	1.85758	2.65674	4.24542	2.1059	2.47021	10.2435
Jarque-Bera	4.88237	2.2047	2.67128	7.15857	1.00257	1.19141	96.0761
Probability	0.08706	0.33209	0.26299	0.0279	0.60575	0.55118	0
Sum	4655	37672	5491	6438.6	56304.9	13222	8526.1
Sum Sq. Dev.	509046	2279532	557156	271145	2896384	569550	794170
Observations	30	30	30	30	30	30	30

Source: Summarized and Tabulated by Authors

Table # 1 (b) Correlation Matrix

	HYDRA	ISBDRA	KARA	MULRA	MURERA	PESRA	QUERA	YEAR
HYDRA	1	0.42	0.77	0.58	0.46	0.44	0.15	-0.2
ISBDRA		1	0.52	0.37	0.37	0.52	0.5	-0.13
KARA			1	0.4	0.39	0.46	0.22	-0.42
MULRA				1	0.45	0.43	0.25	-0.08
MURERA					1	0.55	0.14	-0.1
PESRA						1	0.12	0.14
QUERA							1	-0.24

Source: Summarized and Tabulated by Authors

Table # 2 Unit root test (Augmented Dickey fuller)

Variables	Calculated value	1% Critical value	5% Critical value	Probability
Hydra	-6.475705	-3.610453	-2.938987	0
Isbdra	-4.861913	-3.610453	-2.938987	0.0003
Kara	-4.419697	-3.610453	-2.938987	0.0011
Mulra	-6.58209	-3.610453	-2.938987	0
Mrera	-3.255751	-3.610453	-2.938987	0.0267
Pesra	-4.007323	-3.610453	-2.938987	0.0035
Quera	-3.999407	-3.610453	-2.938987	0.0036

Source: Summarized and Tabulated by Authors

Table 3 Regression Results of Rain Data:

City	Variables	Coefficient	S.E.	t-value	Probability
Hyderabad	YEAR	1.818386	1.91738	0.948369	0.3489
	C	-3448.8	3816.61	-0.90363	0.3719
Islamabad	YEAR	-2.57636	4.32135	-0.59619	0.5546
	C	6343.245	8601.8	0.737433	0.4654
Karachi	YEAR	-0.14552	1.94741	-0.07472	0.9408
	C	479.5695	3876.39	0.123716	0.9022
Multan	YEAR	0.588865	1.26773	0.464502	0.6449
	C	-959.833	2523.47	-0.38036	0.7058
Murray	YEAR	-3.67766	6.74851	-0.54496	0.5901
	C	9186.187	13412.8	0.684882	0.499
Peshawar	YEAR	7.06651	2.06775	3.417487	0.0015
	C	-13583.2	4115.93	-3.30016	0.0021
Quetta	YEAR	-3.56047	2.06572	-1.7236	0.0929
	C	7344.629	4111.89	1.786194	0.082

Source: Summarized and Tabulated by Authors

Table 4 Regression Results of Temperature Data:

Cities	Nature Temperature	Variables	Coefficient	Standard Error (SE)	T-Value	Probability
Jacobabad	Maximum	Year	-0.00855	0.005787	-1.4772	0.1447
		C	51.17072	11.44966	4.46919	0
	Minimum	Year	-0.01357	0.014773	-0.9186	0.3618
		C	47.15899	29.23054	1.61335	0.1117
	Max – Min	Year	0.005024	0.015238	0.32967	0.7428
		C	4.011529	30.14999	0.13305	0.8946
Lahore	Maximum	Year	-0.01262	0.004684	-2.6938	0.0091
		C	55.87134	9.268359	6.02818	0.000
	Minimum	Year	0.036479	0.004002	9.11437	0.000
		C	-53.987	7.918992	-6.8174	0.000
	Max – Min	Year	-0.0491	0.005038	-9.7457	0.000
		C	109.8593	9.967869	11.0213	0.000
Multan	Maximum	Year	-0.01921	0.009541	-2.0129	0.0485
		C	70.8276	18.87809	3.75184	0.0004
	Minimum	Year	-0.10106	0.027641	-3.6562	0.0005
		C	219.7839	54.68945	4.01876	0.0002
	Max – Min	Year	0.081854	0.028055	2.91768	0.0049
		C	-148.956	55.50825	-2.6835	0.0093
Peshawar	Maximum	Year	0.013204	0.004416	2.99031	0.004
		C	3.410894	8.736667	0.39041	0.6976
	Minimum	Year	0.014962	0.006042	2.47626	0.016
		C	-13.4627	11.95523	-1.1261	0.2645
	Max – Min	Year	-0.00176	0.006306	-0.2789	0.7813
		C	16.87376	12.47607	1.35249	0.1811
Quetta	Maximum	Year	0.042415	0.00614	6.90755	0
		C	-59.5627	12.14923	-4.9026	0
	Minimum	Year	0.021767	0.009507	2.28955	0.0255
		C	-35.0822	18.81097	-1.865	0.0669
	Max – Min	Year	0.020647	0.011874	1.73883	0.087
		C	-24.4802	23.49429	-1.042	0.3015
Rawalpindi	Maximum	Year	-0.00108	0.006305	-0.1719	0.8641
		C	30.78007	12.47445	2.46745	0.0164
	Minimum	Year	0.005351	0.005199	1.02922	0.3074
		C	3.923894	10.28677	0.38145	0.7042
	Max – Min	Year	-0.00643	0.005458	-1.1788	0.243
		C	26.85509	10.79883	2.48685	0.0156

Source: Summarized and Tabulated by Authors

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