URBAN POVERTY, HOUSEHOLD INCOME, AND LOCATION OF SLUMS: IS THERE ANY LINKAGE? A STUDY OF URBAN SLUMS IN KARACHI

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Abstract

The process of rapid urbanization is more observable in developing countries where few cities are expending with an alarming rate and resulting in the increasing number of slums. One important reason behind this process is rural to urban migration, rural poor are relatively more active in this process and the major justification behind this phenomenon is higher expected income in urban settlements. The present study was initiated to explore the relationship between different key variables in order to explain linkages between average household incomes, household density and location of the slum. Key findings of this study are the identification of positive and statistically reliable relationship between household density and household income of the inhabitants of forty slums of Karachi. There is no empirical evidence to prove any association between location of slum and average income of the household. The importance of this research is that it is the first attempt to explore this complex issue for one of the growing urban giant, Karachi.

Keywords: *urban, poverty, Slums, Quetta, urbanzation.*

INTRODUCTION

The rural poor are more active in the process of rural to urban migration. They are very keen to relocate themselves to urban settlements, usually to the largest city. The poor living conditions in rural areas and higher expected income in urban areas acts as a catalyst to take the decision of migration. Since, the pace of migration is relatively higher than process of job creation the general outcome is unemployment and rising urban poverty. There is no single definition available for urban poverty. Conventionally economists use income or consumption coupled with some social indicators such as nutrition, life expectancy, infant mortality, access to clean drinking water, and school enrolment. The anthropologists and social planners expand the definition to encompass perceptions of non-material deprivation and social differentiation. Generally the researchers described urban poverty on drawing out its uniqueness often by comparing rural with urban poverty. However, still it is a debatable issue that whether urban poverty differs from rural poverty? In this research our focus will be on the factors which are positively contributing in the growth of urban poverty and, of course, rural poverty itself is one of the important factors.

According to the World Bank, the urban population is 35% of the total population of Pakistan and from 1990-2007 average annual growth rate was 3.3%. The population living in few big cities is 21 % of the total urban population (WDI-2009). There could be three sources of population growth in any city namely, natural growth of existing population, rural-urban migration and international refugee movement. All the three mentioned factors have actively contributed to population growth of Pakistani cities. The population increase has exerted tremendous pressure on the existing housing and civic facilities. Since, housing is one of the basic human needs, due to the process of urbanization, housing demand in cities is

continuously increasing and pushing the rent and housing prices beyond the reach of poor. In order to fulfill this need the new migrants usually prefer to live with other poor living in the informal housing commonly called as slums and termed as "Katchi Abadis" in Pakistan. Total number of such slums in Karachi has increased from 588 in 1985 to 1000 in 2009 (City District Government Karachi). The expression 'slum' not only implies indecent and depressed living circumstances but also implies other important aspects such as illegal or disrespecting building laws and planning regulations (The World Bank and UNHCS, 2000). In developing countries the number of urban slums is showing positive trends in the mega cities. The residents of the slums don't possess the legal ownership of the residential land occupied by them. Initially, they built temporary shelters in existing slums on self-help basis and usually in the same vicinity with their relatives. These slums are characterized with extremely poor living conditions and the inhabitants are prone to various natural and environmental hazards. The civic facilities can't be extended to these areas because of illegal occupancy of the land.

This paper is intended to explore the hypothesis that higher population density of the slums is not influencing the trends of poverty urban in Karachi, the largest city of Pakistan. Due to non availability of data on poverty, the data available on slums will be used to examine the issue. Since, only the people facing the extreme poverty opt to live in slums and their household income and population density of slum can provide some meaning full analysis.

Background

Better employment opportunities or relatively higher expected income is the considered to be the major motivating factor behind the migration decision to the city by a rural poor. For the poor, urban areas have forever supplied a means of improving value of life, as well as being close proximity to better jobs and incomes. Deteriorating conditions for those who live a rural lifestyle and the promise of a better life have prompted millions of rural inhabitants to migrate to cities (Carrie, 2009). A large majority of them come for the simple reason that they can no longer survive in the countryside because of many reasons. Since, to afford the decent urban housing is usually beyond the access of poor so they opt to live in the slums. Therefore, the numbers of urban slums are rising with urbanization particularly with alarming pace in mega cities of developing countries.

World population is projected to touch the figure of 2 billion by 2030, with nearly all of the expected increase to take place in urban area in developing countries (Pitcher, 2009). Roughly half of the population raise is probable to be in the urban slums, just about doubling the size of global slum population (Payne, 2005). The term slum usually refers to a residential area inhabited by extremely poor people who have no land tenure and distinguished by low quality of informal housing. The buildings found there can differ from simplest shack to permanent and sometimes unpredictably well-maintained structures (Carrie, 2009). It is almost impossible to explore the slum from its outlook. A study was conducted on Delhi's slums which provided significant information on various socio-economic aspects of people living in slums. This broad study covered most of the important determinants like low level of education of the migrants, gender inequality in economic status, and significant number of households below the poverty line. The results of the study emphasized on the need for a positive employment generation policy among urban slum dwellers. Additionally, they pointed out the dire need to generate employment and provide facilities at the origin of migration in order to check the influx into Delhi (Kumar and Aggarwal, 2003). Another research was initiated to explore the vulnerability and poverty of poor urban communities living in Dhaka city slums. By using the questionnaire this study has covered 500 respondents living in slums in three neighborhoods of the city. The important findings of this research were that communities living in slums experience poverty and vulnerability in terms of income, consumption and assets which most strongly influenced by location. Additionally, pattern

of habitat, gender, recent migration and household composition were also significant determinants of poverty and vulnerability (Hossain, 2007). Literature on the issue of urban poverty and slums is very rare in case of Pakistan and only confined to newspaper articles. There is dire need to fill this existing literature gap on this important issue which is associated to the life of many. Furthermore, in order to develop any strategy to coup the problems related to urban poverty, it is important to explore the environment in which poor are living.

Data

Since 2006, more than half of world population lives in cities and almost 1 billion of them are deprived and living in urban slums. Without a policy change, an additional 400 million people will join them and the projected population is 1.4 billion in 2020 (UN-HABITAT, 2006). The Asian mega cities are observing a continuous urbanization and resulting in the population density as well as the number of slums in and around these cities. The following table is providing a glimpse of the situation:

Table 1: Pattern of Urbanization in Selected Asian Countries.

country	Total population (1000)	Urban Population (1000)	Rural population (1000)	Percentage Urban	Percentage Slum	Slum Population (1000)
Bangladesh	140369	35896	104473	25.6	84.7	30403
India	1025096	285608	739488	27.9	55.5	158418
Indonesia	214840	90356	124484	42.1	23.1	120877
Iran	71369	46204	25165	64.7	44.2	20406
Pakistan	1444971	48425	96546	33.4	73.6	35627
Viet Nam	79175	19395	59780	24.5	47.9	9197

Source: UN-HABITAT (2001)

We can see that a major share of poor population is living in urban slums. Since, 22 percent of urban population of Pakistan is living in few big cities and majority of the population is below poverty line, hence living in urban slums. In Karachi, there were 580 slums in 1985 and now the number of such slums is closer to 1000 and majority of poor population is living in these slums. Table 2 is providing the historical information regarding the urbanization in city of Karachi. We can observe that the city observed a two major migrations, first in 1947 after the independence of British rule and then in 1971 due to the fall of East Pakistan. The latter trends of population increase are due to rural to urban migration from other parts of Pakistan.

Table 2: The Process of Urbanization in Karachi

Year	Population	Increase/Decrease Over Last Census	Per Cent Increase/Decrease	Average Annual Growth Rate
1729	250			
1838	14,000			
1850	16,773			
1853	22,227	2,773	19.80	
1856	56,879	5,454	32.51	
1872	56,753	34,625	155.90	
1881	73,560	126		
1890	98,000	16,681	29.32	
1901	136,108	24,440	33.22	
1911	186,771	38,279	39.07	
1921	244,162	50,474	37.00	
1931	300,779	57,391	30.70	
1941	435,887	56,617	33.20	3.70
1951	1,137,667	701,780	44.90	11.50
1961	2,044,044	906,377	79.70	6.05
1972	3,606,746	1,562,702	161.00	5.00
1981	5,437,984	1,831,238	50.80	4.69
1986	7,443,663	2,005,679	36.80	4.07
1991	10,250,000	2,806,337	37.70	
2001	13,500,000	3,250,000	31.70	

Source: Hassan, Arif. The Profile of three Pakistani Cities.

Table 3: Pattern of Selected Variables in Selected Slums of Karachi.

S.no	Name of Slum	Average household income US $ /month	Population density/ Sq. hector	Distance from City Centre (Killometers)
1	Khwaja Ajmir Nagri	76.17	114.52	13.78
2	Shafiq Colony	69.28	77.20	19.00
3	Arfat Town	57.55	26.28	10.87
4	Bilal Colony	62.22	42.00	7.56
5	Ghraib Nawaz	58.25	20.67	19.00
6	Mohammad Goth	58.25	11.51	18.00
7	Mustafa Colony	66.58	42.87	21.78
8	Kausar Niazi	59.65	41.63	15.00
9	Khandoo Goth	54.86	11.17	22.78
10	Haider Colony	65.97	44.58	21.87
11	Muslim Rajput	58.25	42.94	24.00
12	Abozar Colony	63.16	19.47	17.00
13	Akbar Colony	63.75	70.18	8.46
14	Datanagar	70.35	48.06	24.00
15	Umer Baloch	57.02	35.86	21.02
16	Usman Ghani	63.20	41.24	22.00
17	khyber Colony	67.61	33.97	26.47
18	Punjabi Para	70.41	43.68	27.98
19	Waheed Colony	60.83	13.78	25.80
20	Khawaja Nagar	71.64	29.27	9.70
21	Gohar Abad	67.85	30.47	16.35
22	Moosa Colony	59.68	66.88	7.00
23	Pasban Mohala	55.91	17.06	19.78
24	Ferooza Abad	60.94	46.35	17.80
25	Jalalabad	57.19	36.00	25.41
26	M.Hassan goth	59.93	25.20	24.00
27	Jamhoria Colony	65.12	55.29	16.54
28	Natal Colony	58.33	47.54	29.38
29	Naghman Goth	66.05	16.08	27.00
30	Pak people's	57.06	16.65	6.78
31	Jinah Goth	76.23	3.13	22.47
32	Qabli Colony	60.18	9.22	17.48
33	Gharibabad	68.31	90.66	9.00
34	Wagri Village	69.94	43.44	15.77
35	Gujjar Nala	72.70	89.68	17.12
36	U.P mohajreen	57.30	10.36	7.69
37	choota Madeena	71.41	46.09	11.78
38	Siraj colony	68.67	69.78	7.98
39	Haji Murad Goth	66.55	37.98	26.89
40	Sadiqabad	70.34	43.32	12.00

Source: Study conducted by Abass, Shaheen and Rashid Kamal, 2010.

The absence of reliable data on slums in Karachi is the major reason which forced the researcher to explore the issue by using the available data on city's slums. A study was conducted by the researchers of Federal Urdu University, Karachi in 2010 to explore the sample of 40 different slums have been surveyed in different directions of city. Since, the purpose of this survey was to discover the geographical pattern of the existing slums and less attention was devoted to the economy. But still we can use some variables like average household income, population density, and distance from the city's central business district of each slum. Following Tables are showing the patterns of population density, average household income, and distance from central business district for slums in four different districts of Karachi. By analyzing the information provided in table 2, we can observe very high population density in each slum. The household income and distance variations are not proving us any meaningful clue to explore the trends. Therefore we are required to apply some statistical techniques to extract some logical pattern.

MATERIALS AND METHODS

In order to explore the above discussed relations, the following functional form is established:

$$Y=f(PD, Dis)$$

In order to estimate functional relationship we will use this model:

$$Y= \beta_o+ \beta_1 PD + \beta_2 Dis + e_t$$

Where:
Y = Average Household income of the Residents of each slum (in US $).

PD = Household Density/ Square Hectors.

Dis = Distance from Sadar (Central Business District).
e_t is the random error term.
In order to estimate the model we willl multiple linear regression technique (MLR) because the OLS cannot be used here due to more than one independent variable. The key assumptions of MLR are as:
MLR1: The population model is linear in parameters.
MLR 2: A sample, $\{x_{i1}, x_{i2, \ldots\ldots\ldots}, x_{ik,} y_{i1}\}$: i=1,2,…,n}, is random.
MLR 3: E , $(u| x_1, x_2 , \ldots\ldots\ldots x_{k)}= 0$ Zero conditional mean MLR 4: None of x is content (nonzero sample variation in x). There are no exactlinear relationships among x,s.
MLR 5: Homoskedasticity, Variance $(u| x_1, x_2 , \ldots\ldots\ldots x_{k)} = \sigma^2$
MLR 6: the population error, u, is independent of $x_1, x_2 , \ldots\ldots\ldots$ x, u is normally distributed with zero mean and Variance σ^2, u~Normal $(0, \sigma^2)$.
Expected Signs of coefficients and hypothesis:
Prior to estimating the Model, it is important to discuss the expected signs of coefficients of explanatory variables, the expected signs of coefficients are:
The expected sign for the slope coefficient of dependent variable i.e. Y and PD, expressed as ""in the Model is positive, because we know that higher population density can provide relatively more economic opportunities and hence higher income. So our hypothesis will be:
H_0: <= 0 and H_1: > 0 (One tailed test).
We are uncertain about the sign for which is the slope coefficient for dependent variable i.e. Y and Dis, it could be positive as slums can't develop closer to city centre due to higher economic value of land and strict government rules and regulations. The other possibility is that in order to avoid daily transportation cost, poor people tend to live closer to potential sources of employment. So our hypothesis will be:
H_0: <= 0 and H_1: > 0 (One tailed test).

RESULTS

By using the estimation software (MegaStat-2007) following is the estimated model:
Regression Analysis

R^2	0.239		
Adjusted R^2	0.198	n	40
R	0.489	k	2
Std. Error	5.297	Dep. Var.	**Y**

ANOVA table

Source	SS	df	MS	F	p-value
Regression	326.3830	2	163.1915	5.82	.0064
Residual	1,038.3149	37	28.0626		
Total	1,364.6979	39			

Regression output					confidence interval	
variables	coefficients	std. error	t (df=37)	p-value	95% lower	95% upper
Intercept	57.8074	3.1758	18.203	4.71E-20	51.3727	64.2422
PD	0.1214	0.0358	3.396	.0016	0.0490	0.1939
Dis	0.0793	0.1313	0.604	.5494	-0.1867	0.3453

Our estimated equation is:

$Y = 57.80 + 0.121\ PD + 0.079\ Dis + e_t$

(18.203) (3.396) (0.604)

Results are confirming that the estimated signs are consistent with the theory. The relatively smaller sign of coefficients is due to the use of use of averaged data. The positive coefficient Dis is indicating that due to the strict government regulation in city centre, slums are emerging beyond a significant distance.

The t-values are mentioned in the parentheses, which are indicating significant value for the coefficient the density coefficient, and insignificant at 95 % level of significance. So, we can say that there is no statistical evidence that the growth of slums follows any pattern to locate near city centre. The overall significance of the regression can be judged through the F-value which is 5.82, statistically significance at 95 % level of significance.

The value of coefficient of determination R^2, the criteria to evaluate overall goodness to fit, is 0.239 or 23.9 %, indicating that all these variables jointly explains 23.9 % of the variation in the decision of living in city slums. The results are consistent with the important assumptions of MLR and therefore, are statistically reliable. So, we may not accept the null hypothesis of no linkage between average household income of the resident of slum and household density of that particular slum. On the basis of extant of relationship and quality of data we cannot establish the causality between these variables.

Additionally, in order to explore the relationships between all the variables, the correlation matrix is also estimated. Which is:

Correlation Matrix

	H.H Den	dis	Y
H.H Den	1.000		
dis	-.268	1.000	
Y	.481	-.046	1.000

40 sample size

critical value .05 (two-tail)
critical value .01 (two-tail)

There is relatively lower degree of negative correlation between “H.H den” and “Dis”, indicating that the slums located away from the city centre are relatively thinly populated. And there is 48.1% association between “H.H Den” and “Y”, mean higher the density of slum, higher the level of average household income of the people. The correlation coefficient showing the negative relationship between “dis” and “Y”, the extreme poor are living in the slums distant from the city centre.

DISCUSSION AND CONCLUSION

Since, it is very difficult to explore perfect causality between household density and average household income. However, this study has pointed out a positive linkage between household density in the slums of Karachi and relatively higher average household income. Additionally, another important finding of this study is that there is very low association between location of slums and average household income. There are many limitations of this research; most important is the lack of reliable data. This research is based of secondary data based on averages, with lower level of reliability, as it covers very lower proportion of entire population. Therefore, chances of biased results are very high. Furthermore, many key variables are missing for example, household consumption, size of household, number school going children and health expenditures etc. The absence of such information is restricting the reliability of this research. It is very important research topic which can provide some logical relationships

helpful to explore the process of rural urban migration and relocation of poverty in urban areas. This research can only provides a starting point to the future research on this topic.

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