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Marginality as a Root Cause of Urban Poverty: A Case Study of Punjab

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I. INTRODUCTION

Historically poverty as a concept was considered to be a key factor to design social policy. The social development normally is concerned with socio-economic empowerment of the poor of the concerned society. It is always been a key issue for developing as well as developed countries, however the nature and treatment of issue varies. The treatment of poverty is different from society to society. In advanced countries, an individual who is unable to actively participate in society or has weak social network, environment, health and education etc. is considered to be poor. Financial empowerment is also considered to be important in these countries but it takes into account with other dimensions of poverty [Lyberak and Tinios (2005)]. However, in developing countries, policy focus is still on uni-dimensional definition of poverty where a single dimension either consumption or income is a strong factor that affects the standard of living of an individual [Wagle (2005)]. Though the multidimensional poverty concept is also getting attractiveness in these countries with a perception that an individual' status in one dimension cannot represent his status in another dimension but still there remains dearth of policy-making. Another important transformation in the literature on poverty is seen in terms of identification of nexus of marginality, social exclusion and poverty [Ruth, *et al.* (2007); Zoran, *et al.* (2006); Whelan and Bartrand (2005)].

In developed countries, marginality is being treated as phenomena related with poverty and social exclusion. Separate surveys were conducted to see the root cause of the problem, in Canada, Canadian Institute of health sciences introduced marginality index as a policy measure. In developing countries, unfortunately very limited literature is available in the area of marginality and social exclusion. However in India, due to caste inequalities, this issue is getting great attention of the researchers [World Bank (2011); Thorat and Nidhi (2010); Thorat, *et al.* (2009); Mitra (2004)]. Marginality is broadly defined as a state

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situated at the margin, this could lead toward social exclusion and hence poverty. On the other hand the term "social exclusion" is a vibrant, multidimensional process driven by unequal power relationships. This exclusion can affect individual, household, group, community and countries across four dimensions i.e. economic, political, social and cultural and make certain objects more vulnerable which leads them to high incidence of poverty [Jennie, *et al.* (2008)]. In this respect, the study of poverty dynamics could benefit from engaging with, and incorporating, models or detailed conceptions of multidimensional social exclusion among the marginalised population.

The state of poverty among this marginalised class may be different from the rest of the population. This marginalised class may face exclusion in socio-economic and cultural participation in the society which deprives them from education, health, networking etc. However, the determinants of poverty may be the same but the effect of these determinants could be different. A number of literature is also available which theoretically and conceptually establishes dimensions and characteristics of marginalisation, addressing processes of restricted participation of this marginalised class in social, economic, political or cultural life of common society. Poverty and social exclusion as two descriptions of severe social inequality have often been mixed up, and hypothesis about their interrelation and characteristics have hardly been tested empirically. Is poverty the first stage on the way out of society, or are there considerable differences between the risks of becoming poor or socially excluded? To this end, this study proposes the conceptualisation and operationalisation of social exclusion tendencies and incidence of poverty in the identified marginalised class. The empirical analysis employs Poisson regression analysis to see the determinants of multidimensional poverty among the identified marginalised group.

Organisation of paper is as follows: Section I is introduction. Section II presents literature review. Theoretical framework is discussed in Section III. Section IV throws light on methodology. Empirical model, estimation techniques and explanation of variables is there in Section V of the paper which is followed by discussion of results in Section VI. Section VII concludes the paper.

II. LITERATURE REVIEW

The rapid rural-urban migration, structural changes in developing economies and globalisation is enhancing the issue of urban poverty and is creating serious problems in the management of urban areas of developing countries, Pakistan being one of them. One of the evident causes of poverty and inequality in the urban areas is marginality [Susan, et al. (2001); WDR (2001); Oxfam GB Urban Programme (2009)]. Poverty is not a uni-dimensional concept and is not the name of material deprivation but is a set or an outcome of interlocking factors such as physical weakness, socio-economic isolation, vulnerability and powerlessness [Philip (2008)]. This poverty type may be same or different within certain socially excluded groups and is strongly dependent upon the clan network of households existing in a marginalised group. Unfortunately these factors leading to poverty have received less attention of the researchers in Pakistan, mostly research on the issue of poverty in Pakistan explores levels, trends and dynamics but not much attention is given to the issue of vulnerability to multidimensional poverty of the marginalised livelihood of this country.

A person is normally considered deprived due to deficit consumption but there are other factors that contribute significantly to make one feel deprived including the shortfall of living needs. The living standards are highly affected by insecurity and powerlessness of future shortfalls. Calvo (2008) therefore considered this vulnerability to multidimensional poverty as a form of hardship that is defined in both conceptual and empirical way. He extended his own index that he developed in 2005 and used bi-dimensional measures of consumption and leisure. His findings suggest that these two dimensions are negatively correlated in both rural and urban cases. This vulnerability is different from poverty much attention is needed to differentiate between vulnerability and poverty.

Vulnerability is related with poverty but it is not necessary that all poor are vulnerable or all vulnerable are poor. Angemi (2011) supported this view in his study with the help of household level analysis within poverty framework. He pointed out that the characteristic of vulnerability is consistent with the characteristics of poor so by this he found that poverty and vulnerability both are related with each other. However, an important point of his analysis was that all poor are not vulnerable while some proportions of non-poor are vulnerable. In the same lines Susan and Takashi (2002) employed two period panel data set of the North-West Frontier Province, Pakistan and proved that the sample household was subject to a high risk of income poverty. Results also revealed the households are more vulnerable to consumption poverty and are affected by the shock of outside employment as compared to self-employed households. An important outcome from this analysis concludes that the age, having less land and irregular sources of income strongly affect the extent of vulnerability among households. Diego (2011) is of the view that the dynamics of risk and uncertainties are helpful to understand the nature of poverty. By applying the pooled GLS method on the national data sets of Uganda, he discovered that along with a sharp reduction in poverty, the vulnerability to poverty in Uganda has also declined, however, the issue of marginalisation existed due to geographical segregation. The results revealed that the central region experienced reduction in incidence of vulnerability while the rural areas, where 90 percent of population is living under extreme poverty conditions, the incidence of vulnerability has increased. Supporting the findings of Diego (2011), a worldly accepted truth is that this high incidence of vulnerability to poverty is mostly dominant in socially excluded and marginalised group.

Early research also support the idea of this social exclusion, In industrialised countries, the evolution of one parent family defines a new pattern of poverty and marginalisation. This marginalisation exists not only in labour market of these countries but also exists in the provision of public housing [Hilary (1989)]. On the other hand, David, *et al.* (2000) tried to develop a baseline for understanding the nature of poverty and social exclusion. They used poverty in terms of deprivation from goods, services and social activities. They are of the view that this way of measuring deprivation satisfied both absolute and relative poverty terms. The analysis shows the there is an increase in the multiple deprivation and poverty in Britain during the survey period. By identifying these issues in family-cycle approach, Dewilde (2003) tried to develop a framework of analysis of poverty and social exclusion. As per his views, a life course perspective re-conceptualises the traditional approaches and combines their best element into the

analysis of social exclusion hence poverty. He used three sociological perspectives on the life course i.e. the traditional North-American life course perspective by Elder (1974), the Continental institutional approach and "political economy of the life course". With the help of these three approaches, he proposed a new framework to analyse poverty and social exclusion relationship over the life course, both theoretically and empirically.

These circumstances of poverty are strongly related with level of social exclusion and parental social class. The factors that provide the poverty prospects at childhood age due to parental social class are strongly associated with current lacking of basic infrastructure [Aya (2009)]. This was also proved by Christopher, *et al.* (2013) with the help of a comparative analysis between four important factors i.e. social exclusion, parental status, childhood economic status and state of current poverty. With the help of EU-SILC module, they figured out how the welfare regimes mediate the impact of parental social class and childhood economic circumstances on poverty. Findings showed that by applying social class plan, intergenerational factors have least impact on income poverty. The other objective of the analysis was to get knowledge about the impact of parents' class and childhood economic circumstances on income poverty and it was discovered that the impact of parent social class on income poverty is weak for social democratic countries and strong for liberal countries, however social class has high impact on vulnerability. In case of income poverty the impact of vulnerability is high in relation to both parent's social class and childhood economic circumstances. Economic vulnerability has also high impact on welfare regimes which experienced difficult economic circumstances in childhood.

Franz, *et al*. (2011) has provided conceptual and analytical framework in order to explore the root cause of poverty. They were of the view that there is need to highlight poverty with respect to marginality. They found marginality to be the root cause of extreme poverty. According to them, marginality is an involuntary position and is a condition of an individual or group that is at the brink of social, economic and ecological systems. Such marginality prevents affected communities to utilise resources, assets and service and all other factors, that become the cause of poverty. They define poverty as a matter of absolute deficiencies as perceived by the poor. They look poverty as a relative, subjective, dynamic and systematic mechanism and concluded marginality as a pattern of causal complexes in a societal and spatial dimension.

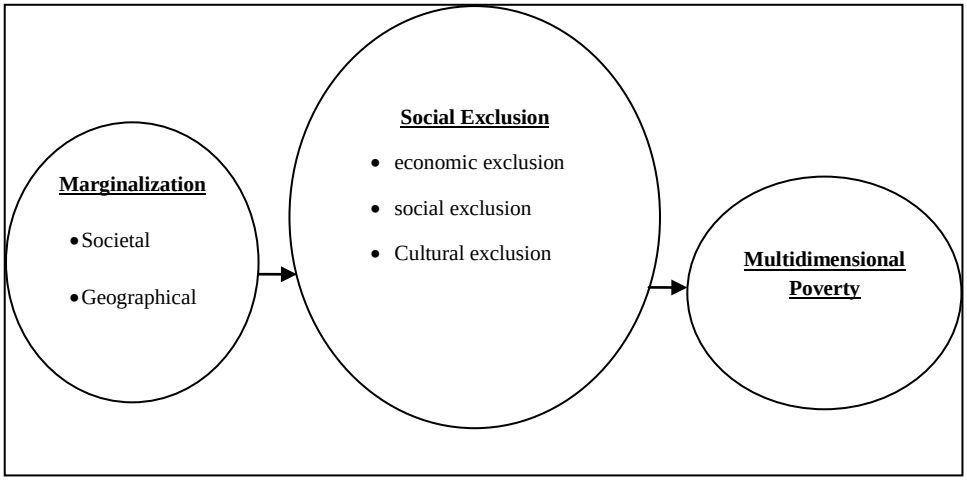
Nayar (2007) is of the view that poverty and social exclusion that are significant socio-economic variables and are generally ignored while estimating ill-health effects. Social exclusion mainly refers to the inability of a society to realise its full potential while keeping all groups and individuals within reach. The relationship between caste and health indicator shows that poverty is a complicated issue that requires to be addressed with a multi-dimensional facet.

Literature no doubt covers issues of poverty, marginality and social exclusion on very broad way. Valuable input was given by different authors to explore issues of poverty among marginalised class. But there is a lack of literature available in identification of marginal and socially excluded population from poverty and social status dataset. Researchers made effort by conducting survey of marginalised group but that was not at province or national level, however the importance of defining socially excluded class at national level is vibrant. Therefore this study identifies marginal population from existing dataset and analyses extent of their multidimensional poverty in Punjab.

III. THEORETICAL FRAMEWORK

Poverty is a long term debate and developing countries are targeting to be free of poverty by 2015, the millennium development goals directly and indirectly target poverty eradication and aims for a good standard of living for the livelihood of the society. To eradicate extreme poverty and to make people out of extreme hunger requires a good educational infrastructure; reduced child mortality, improved maternal health and gender equality and enhanced women empowerment [United Nation (2007)]. Progress towards reducing poverty is slower which addresses policy gaps in achieving the target. Policies overlook the depth in the issues of poverty and take poverty at general level, but the population who is actually excluded from rest is ignored, that population is living below poverty line and marginalised in participating socio-economic activities with rest of the population of the region. Unfortunately pro-poor growth ignores this important aspect of poverty. The facts shows progress is slower in developing world where globalisation is seen in form of higher rural-urban migration but on other side, the economic and social side is still deprived and fails to meet the challenges of this higher rate of rural-urban migration. This causes an increase in the burden of city management and also an increase in the size of the excluded area within the city or periphery of the city. Such population is marginalised while living in the slums and *katchiabadies* of urban area and face a lack of opportunities to acquire skills and access to labour market. This marginalised population then becomes socially and ethnically excluded from the rest of the society and has less access to educational, health and other urban services.

Fig. 1.



This marginalisation defines boundaries between groups living in a society, some groups are economically excluded and to some extent social inclusion prevail in such group, but on the other hand some are demographically and economically excluded, in a society of developed as well as developing countries, therefore marginalisation can be considered as a process in which a community or individual lives at margin and gradually become economically, culturally, socially and politically excluded from rest of population [Zahra and Tasneem (2014)]. There are some deprived groups who are

excluded in all dimensions of exclusion and spent deprived and vulnerable life even being part of that society. Thus marginality leads to social exclusion in long run and this social exclusion is blamed to be primarily responsible for social conflict due to its inability to transform itself since it is strongly connected to the systems of oppression and domination.

Usually poverty links with material lacks, it has theoretical as well as strategic importance, but the increasing understanding is that poverty is not just a name of material lacks, but also associated with restricted access to resources that can make an individual or household well off. UN has defined poverty through the "capability approach" and "the human rights approach". These inter-related themes provide an enriched understanding of poverty and we can define poverty as:

> "A human condition characterised by the sustained or chronic deprivation of the resources, capabilities, choices, security and power necessary for the enjoyment of an adequate standard of living and other civil, cultural, economic, social and political rights".[1]

In continuation of defining poverty, Oxfam (2009) extends this definition into four dimensions, these dimension includes social exclusion, relative and income poverty as well as relative poverty status. Poverty can be defined as:

> "Poverty can't be comprehensively defined by a single approach; it needs to cover the aspects of not having enough to either live on or to build from and being excluded either from wealth or from the power to change for betterment, these sums up to four areas."[2]

Thus poverty cannot be restricted to income and expenditure but it is the name of deprivation of the resources that makes an individual better off in his social, economic, cultural and political life. Oxfam (2009) also explains social exclusion as the fourth dimension of poverty. Exclusion causes poverty, this relation may be causal and may make people vulnerable and then poor, this marginality emerges due to certain groups' representation from ethnic minority, deprived class, deprived gender and due to lack of participation in social life, restricted access toward living facilities etc. that causes vulnerability amongst these groups and in turn poverty in the long run.

This marginality has two way relationships with poverty, it enforces people to be poor or poverty enforces people to be marginalised. Individual or settlements being excluded from the dimension of development and progress move towards extreme poverty. The people that are affected by poverty and exclusion are considered to be the marginalised poor [ZEF (2011)].

Poverty is ex post phenomenon of social exclusion, it is caused by marginality or vice versa. A vulnerable household can be in and out of poverty over time depending on the future income prospects, expenditure stream, and accessibility to social services. A marginalised household can be poor or non-poor. A marginalised household considers being poor or more sensitive to shocks if that household has:

(i) Low level of human capital, knowledge and access to skill improvement.

[1]UN (2007) quoted in Oxfam (2009).
[2]Oxfam (2009).

(ii) Suffers from physical or psychological disabilities and poor access to health facilities.
(iii) Poor infrastructure and have less capacity to improve it.
(iv) Few productive and financial assets and has limited access to credit market.
(v) Poor social networking and excluded from normal lives of society.
(vi) Poor access to job market opportunity.

Therefore:

A marginalised household is considered to be poor if it has a limited access to the living needs, has limited or restricted access to social, economic and political life of its society due to residential, societal, spatial, environmental deprivations etc. and has poor capacity to ensure good standard of living for its members.

IV. METHODOLOGY

The geographical focus of this paper is the Punjab province of Pakistan, which is an economic hub of the country. The dynamic nature of agriculture and industrial production along with having major population share of the country makes it more important than other areas or provinces. However, Punjab has witnessed major urbanisation in the past few decades and has achieved improved growth rate but that has not proved to be beneficial for the entire population and certain segments of urban areas remain in extreme poverty.

Numbers of studies are available that cover issues of poverty in Punjab as well as in Pakistan but advanced level analysis on poverty is rare in literature. Primary data from the combined round of PIHS was used by Siddiqui (2007) whereas Siddiqui (2009) used PSLM 2004-05 survey. Sikander (2009) used the data from Multiple Indicator Cluster Survey (MICS)-2003-04 to analyse the determinants of poverty in Punjab. Malik (1996) used self-collected data on a rural locality called "Wanda" (District Bhakkar, Punjab). His results were based on a sample size of 100 and however were not nationally representative for inference about the determinants of poverty. The analysis of marginalisation and poverty in this study is based on two waves of data from Multiple Indicator Cluster Survey (MICS) conducted in 2007-08 and 2011-2012. In 2007-08, 91,280 households participated in the data collection process out of which 59456 were rural and 31824 were urban. Of this sample 594,851 individual from urban and rural areas were covered with a wide range of socio-economic issues on living condition, economic situation, health and education, housing etc. In data set collected in 2011-12, 3102048 household were covered, in which 3488 was urban and 3788 are rural, and this data set also covered more than 90 indicators from different socio-economic perspective. The unit of observation for the analysis of this study is the individual resides in the urban areas of Punjab, Pakistan.

This paper is primarily concerned with the measurement of poverty among marginalised people of Punjab with immediate focus on whether these people are living in extreme poverty or out of poverty. The definition behind is that poverty is a relative concern that can be explained with economic and social wellbeing, capability and social inclusion. Whereas marginalised and socially excluded concept is another important dimension of the study which has been extracted from Zahra and Tasneem (2014). The

flow of empirical analysis is based upon marginalised population as this study is concerned with the measurement of poverty among marginalised people. Marginalised and socially excluded population in urban areas of all cities of Punjab are extracted with the help of an index developed in Zahra and Tasneem (2014)along with the dimensions and indicators of marginality given below in Tables 1 and 2.

Table 1

Dimension and Indicators of Marginality in Punjab

Dimension	Indicators
Residential Instability	People living alone, people who are not in youth (aged 16+), average number of persons per room, dwelling that are apartment and small building, population of divorces/widowed, people living on rent, people without access to electricity and gas
Material Deprivation	People aged 20 and above without secondary school, people receiving transfer payments, unemployed population (aged 15+, population in low income quintile, type of housing, unpaid family worker)
Dependency	Dependency ratio, female population, population aged 65+, population (aged 15+) economically inactive.
Ethnicity	Language, Religion

Reproduced from Zahra and Tasneem (2014), Marginality and Social Exclusion in Urban Punjab: A Spatial Analysis, Working Paper, GC University, Lahore.

Table 2

Dimension and Indicators of Exclusion in Urban Punjab

Economic Exclusion	Employment (unemployed or discouraged employment), Population at poverty risk, Material deprivation of housing, housing congestion
	lack of washing machine, freezer and oven, lack of computer and internet accessibility, lack of access of bank account, overcrowding
Exclusion from Social Services	Low educational achievement (basic schooling) and early school leavers, No access to water and sanitation facility, Household with young children not in school, Cannot read or write, Poor general health, Poor physical health, Disable child quality
Cultural Exclusion	low neighbourhood, membership of community centre etc. little social support

Reproduced from Zahra and Tasneem (2014), Marginality and Social Exclusion in Urban Punjab: A Spatial Analysis, Working Paper, GC University, Lahore.

Multidimensional poverty has been evaluated in extracted population sample.

V. EMPIRICAL MODELING, ESTIMATION PROCEDURE AND EXPLANATION OF VARIABLES

Literature provides different techniques e.g., Ramya, *et al*. (2014) and Labar and Bresson (2011) estimated multidimensional poverty index based on Alkair Foster Measure, whereas Mahlberg and Obersteiner (2001), Sikander and Mudassar (2008) and Merz and Rathjen (2011) used logit regression to see multidimensional poverty. Wagle (2005) contributed in literature by introducing index based estimation of multidimensional poverty and used structural equation modeling. Literature support a wide range of methodologies which used structural as well as simultaneous equation modeling. Attention has now been diverting to analyse the impact of different deprivation on extent of multidimensional poverty. The extent of multidimensional poverty can be seen with the help of number of areas in which a specific household or individual is deprived [Alkair and Foster (2011); Jhon, *et al*. (2013)].

Dimensions in which household or individual are deprived is measured as count data (number of dimension in which each individual is deprived) and are assessed with Poisson regression, a useful technique for count data modeling. It is one of the most robust model for discrete data modeling with an assumption that the dependent variable (number of dimensions in which individual is poor) is distributed as Poisson and its logarithm is a linear function if there are independent variables. Wang and Famoya (1997) used this technique for the modeling of household fertility decision, Femoya, *et al.* (2004) made an application of this model on accidental data, John, *et al.* (2013) use this to assess multidimensional poverty in Nigeria.

Poisson regression captures discrete and non-negative nature of data, the second advantage of Poisson regression is that it allows inference to be drawn on the probability of occurrence [Winkelmann and Zimmermann (1995)]. Another important feature of Poisson regression is that dependent variable is modeled as a deterministic function of independent or explanatory variables, therefore randomness is fundamental and not because of other factors.

The dependent variable in the model is the number of dimension in which an individual is poor with non-negative numbers. An individual's deprivation in different dimension is based on different socio-economic and demographic characteristics, the expected value of dependent variable (y) on a set of explanatory variables (x) can be written as:

$$E\left(y/x\right) = e^{(x'\beta)}$$

Where

Y = dependent variable
x = set of explanatory variables such as health, education, assets, social wellbeing, environmental wellbeing, economic inclusion etc.
e = base of natural logarithm
x' = transpose of *x*
β = the vector of parameters.

The above equation shows that *E(y/x)* is greater than zero, therefore an individual deprived in number of dimensions conditional on x is the Poisson distributed with a probability of:

$$P\left(Y = {}^{y}/_{x}\right) = \frac{e^{-e\,(x'\beta)}e^{(x'\beta)}}{y}$$

Where $y = 1, 2, 3 \ldots 8$

The maximum likelihood poison multidimensional poverty equation can be:

$$L\,(\beta) = \sum\left(y_i x_i \beta - e^{x_i \beta}\right)$$

*X'*s in above equation are the set of independent socio-economic variables which describe individual's characteristics. The full model therefore can be written as:

$$\delta_i = e^{\beta_0 + \sum_{j=1}^{k} \beta_j x_j}$$

Where

δ_i = the expected number of dimension in which individual is poor
e = the base of natural logrithem
β_0 = the intercept
β_j's = coefficient of regression
x_j's = explanatory variables

The study takes "a number of dimension in which an individual is deprived" as dependent variable. To calculate the number of dimension in which an individual can be poor, Alkair Foster (2010) methodology has been used that helps to measure dimensions of poverty. Furthermore Ataguba, *et al.* (2013) also used the same technique to find dimensions in which an individual can be poor. Taseer and Zaman (2013) used this technique to show time series breakdown in multidimensional poverty in Pakistan. This methodology uses dual cut-offs to find dimensions adjusted measure of poverty and is better than other methodologies as it satisfying assumptions of monotonicity and decomposability. To identify and measure multidimensional poverty, head-counts and dimension adjusted head count rations are used. The dimension adjusted head count M_0 can be calculated as:

$$M_0 = H_0 \times A$$

Where H_0 is the proportion of people who are deprived in certain dimension and A is the mean share of deprivation among the poor, M_0 is used as a dependent variable in the model. Internationally eleven dimensions has been selected to measure multidimensional poverty among household or individuals but in case of MICS dataset, it is only useful to calculate seven dimensions. These include economic, housing, air quality, health, education, water and sanitation, assets. Detailed composition of these dimensions is given below in Table 3.

The contribution of human capital to poverty alleviation is proved by previous literature. The development of human capital leads to an increase in standard of living at household level. Communities with more low-skilled workers in general are more likely to experience high rates of poverty. The *educational attainment* as a measure of quality of human capital is important, High educational attainment may imply a greater set of employment opportunities that could decrease poverty [Cameron (2000); Chaudhary, *et al.* (2009)]. The availability of education facilities serve as a main indicator of remains

Table 3

Dimensions and Indicators used for Dependent Variables

Dimensions	Indicators
Living Standard	Housing type (floor, roof and walls material), dwelling type, rooms congestion, electricity,
Environment	Type of Fuel, open dumps nearby, solid waste disposal, kitchen for cooking
Assets	TV, Refrigerator, AC, Vehicle (car, Motor Cycle), Oven, Washing Machine, Room cooler
Education	Education of HHH, education attainment (primary)
Health	Vaccination, Disable HH member
Livelihood	Employment type, other source of income
Water and Sanitation	Proper means of water, proper mean of sewerage, toilet facility, HH use boiled/filtered water for drinking purposes

poor. If the household have an accessibility of school then there is a greater chance to get rid from poverty. Theory shows a fundamental impact of health on households, it is considered that the accessibility to health services directly influence the productivity of individual household [McDonough, *et al.* (2009); Zhong (2009)]. Another indicator of housing standards is access to electricity. The housing indicators also affect the standard of living of households. Employment is considered as an important factor to affect poverty. The occupational affiliation of the head of household is found to be an important determinant of poverty. The empirical results suggested that the industry specific employment is necessary for reducing poverty (increased per capita consumption and ultimately per capita food consumption) [Sikander (2009)]. The employment trend is defined by *participation rate* which is the ratio of the number of workers to the number of adults in a household. The participation rate is expected to be negatively correlated to poverty. *Household income* is an important determinant of household expenditure since it serves as a budget constraints to the amount that can be spent within a period, there is also bound to be a correlation between income and poverty level of a household, if all other things being equal. The household income is also important to define the poor and non-poor households for further analysis. In economic perspective, to judge the standard of living of households, the *household Property and Assets* which contains the land, livestock and other accessories of life also plays a role to determine the poverty level among households.

As this paper is more concerned with relative poverty related with socio-economic inclusion, capability etc., therefore this study also uses some indices based on socio-economic characteristics of individual and household from where s/he belongs, developed by Wagle (2005). Since integration of different theories would develop a realistic picture of poverty, this study uses different dimension of poverty as explanatory variable i.e. economic inclusion, social wellbeing, capabilities and environmental

wellbeing. The index of economic inclusion is developed with the help of different variables that affect an individual in his economic life. Theories suggest a strong link between employment type, access to finance and occupation with standard of living [Athinkson (1999); Wagle (2005)]. The employment in executive and professional fields, employment in other fields, income, wealth and employment of HHH's partner are some of indicators that are important for economic inclusion of a person. Theory suggests that social wellbeing can be measured by housing condition, electricity, access to safe drinking water, access to secure housing tenure, type of toilet facility, type of cooking fuel and type of assets etc. The index of social wellbeing helps to predict the contribution of this index in the poverty status of households. The approach to measure capabilities of household to earn and to make its standard of living better proves to be important for poverty analysis. Previous literature support that educational achievement, health status, gender related discrimination within households, household head health and access to health facilities as indicators of capability. [Sen (1992); UNDP (2000); Wagle (2005); Alkair (2007)]. Finally, the index of environmental wellbeing also plays an important role in determining the level of poverty among urban household, this index includes such indicators that directly affect the health of household. The access of safe water, proper sanitation and solid waste disposal facilities can be considered as some of the important aspects of environmental conditions. All indices are calculated with the help of principle component analysis.

VI. MARGINAL POPULATION IN VARIOUS POVERTY BANDS

The estimation of poverty line is very helpful to define various bands of poverty such as extremely poor, ultra poor, non-poor etc. [*Economic Survey of Pakistan* (2007)]. Population which consumes less than 50 percent income of poverty line are categorised as extremely poor, whereas population which lies between income groups (more than 25 percent of poverty line income) is considered as non-poor.

Table 4

Marginal Population in Various Poverty Bands

		2007-08 Income based Poverty Line ($1.5 per Day)	2011-12 Food Consumption based Poverty (Rs 1668)[3]
Extremely Poor	> 50%	40.8	94
Ultra Poor	50% <X>75%	30.0	4.1
Poor	75% <X>100%	11.0	1.2
Vulnerable	100% <X>125%	5.8	0.3
Non-poor	125% <X	6.8	0.4

[3]Planning Commission of Pakistan (2011).

Around 70 percent of total population lives within extremely poor and ultra-poor and only 6.8 percent of marginal class live out of poverty in 2007 while in 2011 the poverty line is based on expenditure approach, where 94 percent population appears to live in extreme poverty.

VII. RESULTS AND DISCUSSION

The results from poison regression analysis is presented in Tables 5 and 6, the study use four models (two for each data set) to prove hypothesis. Theory suggest a chain of marginality, social exclusion and poverty, therefore model 1 of each dataset shows results that includes marginality as an explanatory variable, while model 2 contains all other variable of model one and use social exclusion index as an independent variable to prove the theoretical link.

We found that coefficient has correct signs as defined in theory with some minor contradictions. Results provided in Table 5 show that income has a negative impact on the proportion of dimension in which household can be poor and increase in income level will reduce poverty threats by .02 percent ($e^{0.0002}$=1.00), keeping all other variables constant. The coefficient is significant at 1 percent. This also proves the importance of multidimensional poverty that income has a contributory role if defining a person poor but does not have a unique role. While occupation of an individual also plays a negative impact on the possibility to be poor and can draw him out from poverty, individual who has good mean of earning than an individual with no or odd job has lesser threat of poverty by 13 percent (e.0013=) at 1 percent level of significance.

As far as the education of individual is concerned, compared to those individuals who are illiterate, people having incomplete primary education, threat of poverty is lower by 23 percent ($e^{0.2381}$ = 1.269), compared to not being literate, people having primary education is found to be at minimal threat of poverty by 25 percent ($e^{0.2549}$ = 1.290) again assuming all other variables to be constant. For those persons, who have matric and higher education have a lesser threat to be poor by 29 percent ($e^{0.2926}$ = 1.339).

As far as housing condition is concerned, the variables reported those individual who have poor housing condition, the result shows a positive relationship of both variables, compared to people living in better housing, the threat to be poor for those individual living in poor housing increased by 11 percent($e^{0.1103}$ = 1.116). The coefficient of housing is significant at 1 percent.

An individual who has good amount of assets is also better off as compared to individual with no assets; the possibility to be poor for that individual is lower by 21 percent ($e^{0.2198}$ = 1.245) while holding all other variable constant. Capability to be better off has also strongly affect the status of poverty of an individual, a person with good capabilities has a 31 percent (e0.3152) less chances to be in multidimensional poverty than a person with no capabilities. Economic inclusion also lower the risk of poverty, an individual who has greater inclusion in economic activities has 55 percent ($e^{0.5578}$ = 1.746) chances of deprivation in different dimension that a person with no economic inclusion. Similar with social wellbeing, person with greater social and civic services has less chances of deprivation than a person with no social and civic services. The coefficient is significant at 1 percent level. Model 2 has almost same results with the same nature of relationship.

Table 5

Poisson Regression Output (2007-08)

Dependent Variable: Poverty Counts

	Model 1		Model 2	
	Coefficient	Standard Error	Coefficient	Standard Error
Income	–.000261***	0.000157	–.000259***	.000157
Poor Health	.00362	.01121	.001378	.011224
No Education (reference)				
Pre-primary	–.238136***	.019691	–.22552***	.01975
Primary	–.254944***	.008643	–.23253***	.009776
Middle	–.26673***	.0107994	–.237417***	.012318
Matric	–.292634***	.022817	–.25584***	.023737
Higher	–.292006***	.0278123	–.25359***	.028669
Madrassa	–.316337***	.0978124	–.28196***	.098035
Poor Housing Condition	.11037***	.00729	.11064***	.00729
Occupation	–.00135***	.000102	–.00130	.000104
Assets	–.21986**	.09553	–..19139**	..095745
Capability	–.315201***	.035955	–.26964***	.036493
Environment Wellbeing	.26406***	.03086	.26964***	.03087
Social Wellbeing	–.71456***	.096468	–.724314***	.096684
Economic Wellbeing	–.55788***	.072224	–..632038***	.070282
Marginality Index	–.03103**	.007036	–	–
Social Exclusion Index	–	–	.02941	.00722
Log Likelihood	–50127.518		–50129	
Pseudo R2	.0239		.0239	
LR $\chi 2$ (12)	2457.01		2454.04	
Prob> $\chi 2$	0.0000		0.0000	

Table 6

Poisson Regression Output (2011-12)

Dependent Variable: Poverty Counts

	Model 1		Model 2	
	Coefficient	Standard Error	Coefficient	Standard Error
Food Exp	–.00035**	.000151	.000346**	.000513
Poor Health	.28101***	.050004	.26754***	.04996
No Education (reference)				
Pre-primary	.241633***	.05386	.244616***	.053865
Primary	.225908***	.00840	.231517***	.008779
Middle	–.03337**	.01031	–.03517**	.011005
Matric	–.045371***	.00970	–.028226**	.010339
Higher	–.04938***	.00677	–.028919**	.01123
Poor Housing Condition	.04979**	.016667	.03649**	.01650
Occupation	.000184	.000239	.000205	.000239
Assets	–2.3437***	.161364	–2.4809***	.16043
Capability	–.173256**	.069413	–.151884**	.06940
Social Wellbeing	3.6445***	.12478	3.7985***	.12019
Economic Inclusion	–.163873***	.022886	–.10671***	.01974
Marginality Index	.035296***	.006772	–	–
Social Exclusion Index	–	–	.01079**	.00513
Log Likelihood	–58456		–58468.287	
Pseudo R2	.019		.0189	
LR $\chi 2$ (12)	2275.35		2252.63	
Prob> $\chi 2$	0.0000		0.0000	

Results of Poisson regression of 2011-12 data wave presented in table 6 had only expenditure data while income aspect of household has been ignored. Therefore the above table has two variables missing due to non-availability of data, one is income of an individual and the other is environmental wellbeing while one variable is additional i.e. expenditures. According to results, expenditure has negatively affected the risk to be in poverty, increase in expenditure will decrease deprivation by .03 percent ($e^{0.0003}$=1.00), keeping all other variable constant. The coefficient is significant at 5 percent. As far as the education of individual is concerned, compared to those individuals who are illiterate, people having incomplete primary education, threat of poverty increase by 24 percent ($e^{0.2416}$ = 1.269), compared to not being literate, people having middle level education is found to be at a minimal threat of poverty by 3 percent ($e^{0.0333}$ = 1.034) again assuming all other variables constant. For those persons, who have matric and higher education have a lesser threat to be poor by 5 percent ($e^{0.0497}$ = 1.051). As far as the housing condition is concerned, the variable reported those individual who have poor housing condition, the results show a positive relationship of both variable, compared to people living in better housing, the threat to be poor for those individual living in poor housing is increased by 5 percent($e^{0.0497}$ = 1.051). The coefficient of housing is significant at 5 percent. Capability to be better off has also strongly affect the status of poverty of an individual, a person with good capabilities has a 17 percent ($e^{0.1732}$ = 1.189) less chances to be in multidimensional poverty than a person with no capabilities. Economic inclusion also lower the risk of poverty, an individual who has greater inclusion in economic activities has 16 percent ($e^{0.1638}$ = 1.178) chances of deprivation in a different dimension that a person with no economic inclusion. Similarly with marginality index and social exclusion index, person with higher marginality and social exclusion has high threat to be poor in different dimensions than a person who is not at marginal position and not socially excluded. Model 2 of this wave also shows similar results with the same nature of relationship.

The results showing almost significant relationship with relationship with poverty perceived in theory expect some of variable which shows opposite results. Above results shows a picture of poverty during two time period i.e. 2007-08 and 2011-12 respectively. Increase in income and expenditure makes an individual better off and reduce chances to be in poverty. An individual with high income and good nutrition can access living facilities well and can be more productive than a person with less food consumption [Headey (2008)]. Results also show a negative and significant impact of income and expenditure on deprivation and poverty in both waves. Wealth of an individual also includes type and number of assets which an individual has, therefore the state of poverty strongly depends upon the asset ownership of an individual or household [Moser (1998, 2006)]. Results show a negative, strong and significant relationship of assets ownership on risk of multidimensional poverty, a person with good assets has lower chances to be poor in different dimension than a person with no assets. Same relationship is proved by Meck and Lansley (1985) and Milton (2003), where lack of assets make a person more poor. Liverpool and Alex (2010) shows a positive impact of asset building on consumption expenditure.

Another important determinant of poverty is education which is proved by results from both waves. To make a detail analysis, we split education into different levels and

compare risk to be poor with illiteracy. Higher education lower chances of poverty, Haroon (2009) shows a positive impact of education on expenditures of household, Dewilde (2004) proves that with increase in educational attainment, the risk of poverty has been reduced, he tested this theory both on uni-dimensional and multidimensional poverty risk, results also reflect theoretical base, first wave supports the attainment in education lower the chances for household to be poor, all results are significant at 1 percent level, while second wave (2011-12) shows a positive relation of education attainment till primary level with poverty risk for an individual, while education attainment (above primary and onward) will lower risk of poverty significantly. Jhon, *et al.* (2013) also found a positive impact of primary education attainment on multidimensional poverty counts; similarly Dewilde (2004) also found greater proportion of population with higher education within poverty. Narrayan, *et al.* (2000) and Meck and Lansley (1985) also highlights assets, income and education as important determinants of poverty.

Alkire (2008) gives high importance to housing condition as it plays very important role in defining multidimensional poverty. If a person living in poor housing, his chances of living in poverty is greater, poor housing will reduce chances of having good living facilities, relax life style and productive socio-economic contribution [Taseer and Zaman (2013)]. Results support theory and prove a significant impact of poor housing on chances to remain in poverty. As far as health of an individual is concerned, in case of first wave, results are insignificant and positive toward risk of poverty, while second wave shows highly significant and positive relationship of poor health of a person.

Sen (1992) approach of capability was defined as a transformed area of poverty research, later OPHI measure by Alkier and Foster (2008) also focused on this dimension. She gave due importance to capabilities in definition of multidimensional poverty measurement. Results show a negative relationship between capabilities risk of poverty. The improvement in capability will reduce the chances of poverty. Wagle (2005) also proves a negative relation between poverty and capability improvement. Similarly, the index of environment wellbeing has a negative impact on poverty and environmental up-gradation ensures betterment in standard of living of an individual. There is a significant contribution of environment hazards in urban poverty, degradation of renewable resources i.e. fresh water and poor mean of waste management lead toward poor standard of living [Satterthwait (2003)]. The index of social wellbeing also shows expected relation and negatively affects the risk of poverty; an individual who is socially empowered has fewer chances to be captured in the trap of poverty then a socially deprived person.

The relationship between marginality and poverty shows different results in two waves, during 2007-08, relationships show a negative relationship, here one thing which should be considered while explaining this relationship is that the marginality index is in form of least to most marginal, the increase in value of marginality index shows high marginalisation of specific individual, therefore if we assume marginality leads to poverty then the expected relationship between dependent variable and marginality index is positive which exist in 2001-12 data results. According to Franz, *et al.* (2011), it is not necessary that a marginalised person is poor or a poor is marginalised, however both are interlinked, therefore results support the theory presented by Franzs, *et al.* (2011). In

2007-08, a negative relationship between marginality index and poverty counts is reported, however in the second wave relationship is positive and increase in marginality would cause an increase in poverty counts. According to [Sen (2000)], the concept of social exclusion is considered to be the root cause of poverty. The composition of social exclusion index is similar to the composition of marginality index, higher value shows higher exclusion or vice versa. Both data results show a positive and significant relationship between social exclusion and poverty counts. An increase in social exclusion would cause ultimate poverty in different dimension of socially excluded person.

VII. CONCLUSION

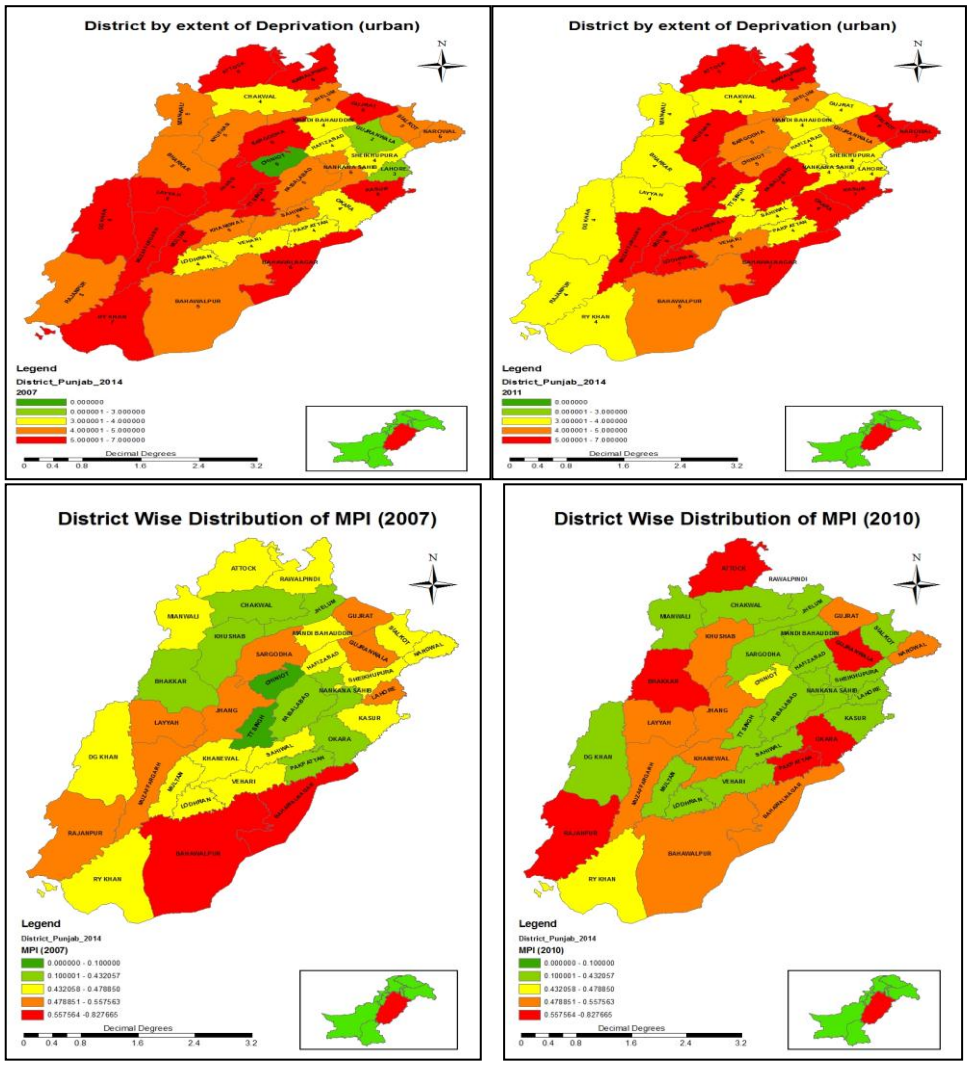
The study is an attempt to analyse the determinants of poverty among marginalised population of urban Punjab. For this purpose, two waves of Multiple Indicator Cluster survey (MICS) of the year 2007-08 and 2011-12 has been used. Among a sample set of more than two hundred thousand, around 96000 were reported as marginalised based on marginality index, and 33,629 were drawn as socially excluded from marginal group, rest of the population is considered as marginal but not socially excluded.

Results verify hypothesis and show that marginality is a root cause of extreme poverty. As far as multidimensional poverty of this marginal class is concerned, the population with no education or low level of education is highly poor in multidimensional way, the extent of economic inclusion, social betterment, capability improvement also positively affect an individual and his poverty count is reduced with the betterment of above mentioned indicators. Overall results confirm the research question that marginality cause poverty.

On the determinants side, the income support programs cannot break the vicious circle of poverty until and unless policies focus is toward the determinants of poverty. Along with education, health and housing, the role of capabilities and environment, exclusion and marginality cannot be ignored. There is a strong link of these variables with poverty. Therefore a need to focus on these determinants is important and providing income, skills, education and other related factors should be the focus of any policy decision. Marginality and social exclusion may be a new concept for poverty reduction policy-making, but we can't deny this fact that in Pakistan, the focus of poverty reduction strategies is on curative measures, not on preventive measures. Therefore those factors which exclude a household or individual from community is not at target of policy makers.

Countries are going to treat marginal communities separately to make specific policies for their benefits but in Pakistan still there is dearth of literature and no dataset exist which could cover issues of marginal community specifically. A need to study marginal class and their problem through survey and research is strongly needed. Moreover, a new diverted focus of policy should be on the treatment of poverty among disadvantaged class. The separate survey to target marginalised communities if not possible then at least inclusion of this dimension in some national and provincial level data set can fulfil the purpose. These people have different nature of issues in their social, economic and cultural lives which are related with socioeconomic service delivery mechanism together with infrastructure provision.

APPENDIX



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Comments

- The paper aims to provide a district level analysis which focus on micro level poverty analysis of the marginalised people of Punjab with focus on whether these people are living in extreme poverty or out of poverty. Paper also find out the determinants of MPI by using Poisson regression The study has defined the marginality as a state situated at the margin, this could lead toward social exclusion hence poverty or a marginal person can be out of poverty. Please rephrase the definition of marginality because it is missing the social-economic aspects.
- I not found much difference between theoretical framework and literature review. Author has given a uni-directional framework moving from marginalisation—social exclusion—MPI. I think it is not unidirectional. Current deprivation can also transmit social exclusion in future and especially look at the socially excluded people, they are transferring their current deprivations into their children by making them potential future social excluded people. You also mentioned similar statement at pp. 8 that marginality has casual relation with poverty.
- At pp. 9 author give powerful statement that "urban areas of Punjab remain in extreme poverty". I think its cannot be justified. Though there are pukets of rural poverty with a lot of regional variation but you can find comparatively less urban poverty differential even north, central and south. You have skipped three studies which have applied the small geographical technique on two micro data-sets to compare poverty levels across more than one hundred districts of Pakistan. Jamal (2007) and Cheema (2010) utilised the HIES 2004-05 and PSLM 2004-05 for the district level poverty comparison while Ali (2011) has applied this technique on the 2007-08 HIES 2007-08 and 2007-08 MICS (Punjab) to predict poverty at district and tehsil levels for Punjab.
- On pp. 9-10 please correct the sample information of MICS 2011-12. 102,545 were conducted. The study has taken the concept of marginalised and socially excluded from Zahra and Tasneem (2014). I not found the study in reference list so unable to know how concept has been measured. Though annexure 1 and 2 has explained the marginality and exclusion but definition is not clear. i.e. in marginality people living along not in youth (16+) but youth is also comprises of 16+, second how you tackle the students as your unit of analysis is individual but I don't know what age is in unit of analysis, then majority of the characteristics coming from hh, so it should be defined at hh level. Then almost the variables in marginality and social exclusion are same i.e. economically inactive/unemployed in marginal and employment in social exclusion, education vs literacy or low educational attainment, electricity/gas/rented home vs freezer/oven/computer, average number of persons per room vs housing

congestion. Same are the indicators of MPI so if you put all the three annexure tables together, you cannot found any major difference. Then if you see annexure Table 3, you are taking majority of indicators at hh level so why then analysis at individual level. The study has taken 7 dimensions and a lot of indicators (though definition is not given of indicators.) need to check multi-collinearity, and robustness.

- At pp. 12 author stated that the study takes "number of dimension in which an individual is deprived" as dependent variable.
- In Table 4.1, there is need to explain poverty line i.e. author reported 1668 for 2011 but it is not. Second how poverty is estimated from MICS data, including technique and poverty line. Third you cannot compare income based vs consumption base and you can find a lot of difference in Table 4.1.
- I am concerned on the theoretic building of poisson regression model. Because majority of your variables are either facing multicollinary or they also exist in the estimation of dependent variable. (what you do if income is 0 as explanatory variable. Education is itself determinant of income (Table 4.2). Occupation and income, assets and income and then social, economic well-being and marginally also capture the same.
- In Table 4.3 food expenditure is itself determined by MPI. It's totally wrong
- In annexure GIS mapping, deprivation is 0 or high in Gujrat, Rawalpindi, Attock is unable to understand, the range is also questionable. All these numbers make the whole paper ambiguous.

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