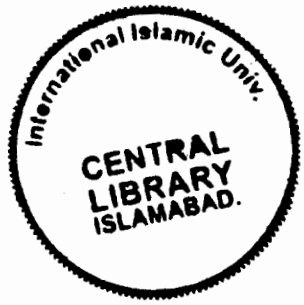
Poverty Measurement and Alleviation In Light of International Theory and Experience

Presented By

Taseer Salahuddin

127/MPHD/FE/Fo6



Supervised By

Dr. Asad Zaman

School of Economics

International Institute of Islamic Economics

International Islamic University Islamabad

2011

POVERTY MEASUREMENT AND ALLEVIATION IN LIGHT OF INTERNATIONAL THEORY AND EXPERIENCE

Taseer Salahuddin

127/MPHD/FE/F06

Submitted in partial fulfillment of the requirements for the Master of Philosophy in Economics at the Faculty of Economics, International Islamic University, Islamabad.

Supervisor

Dr. Asad Zaman

April, 2011

ABSTRACT:

Based on an extensive literature review, we will show that poverty is actually a multidimensional phenomenon which needs to be combated against all different dimensions for achieving an over all human wellbeing. However, due to unidimensional or income based poverty measurement indicators in use poverty alleviation measures are designed only against income dimensions of poverty. The implication here is that these wrongly designed poverty alleviation strategies may lead to aggravation instead of relief. Multidimensional measures provide a deeper and more accurate picture of poverty than the unidimensional measures currently in use by policy makers. Our findings based on dimension-wise poverty breakdown showed that during 1998-99 and onwards, health, women-empowerment, living standard and water & sanitation were the four major contributors of poverty. These four dimensions showed stability in their behavior over the years with negligible declining trend till 2005-06. Occupation was the only dimension showing any real reduction from 6.64% in 1998-99 to 2.4% in 2005-06. Education showed a major deterioration of the situation by showing increase from 2.4% to 20.64%. Not only does this cancel potential gains, but it also bodes ill for the future, since losses in education have long term implications, as many studies following Barro & Lee (1993) have shown. Contrary to optimistic pictures painted by official records, our research leads to the conclusion that along many dimensions poverty has risen during these years; the educational losses will impact adversely on poverty for years to come and cannot be rectified easily. Looking at the individual dimensions and their trends over time gives the accurate picture of the nature of poverty being faced by a country and the basic idea of combating poverty effectively. Need of the hour is to realize the importance of implementing multidimensional poverty analysis and target the dimensions of poverty priority wise.

CONTENTS

LIST OF TABLES:

LIST OF FIGURES:

ACKNOWLEDGMENTS:

I thank Almighty for the guidance and stamina for this research. May my research be useful to humanity (Amen). My deepest thanks go to Dr Asad Zaman for his thorough supervision. During this research he has been a very patient and persistent teacher. He has ignored my limitations and weaknesses and covered them up with his strengths. He has proved my beacon of knowledge and understanding by polishing my analytical and writing skills. Sir my deepest thanks!!! I would like to acknowledge the kind assistance provided to me by my husband for many valuable discussions about the topic of this thesis, for which I am very grateful. I thank my parents for their prayers. I am grateful to my in-laws for taking excellent care of me every weekend or so when I use to stay with them for my thesis. I especially am grateful to my friends, Riffat Yasmeen and Ayesha Ammanullah for their unconditional support in this degree, without which it would not have been possible. Last but not the least; I would thank my son for his patience and understanding for my absence due to my studies and frequent traveling. Thank-you all!!

DEDICATION:

I dedicate my thesis to Our Prophet Muhammad (S.A.W), Mercy for All Mankind, and to all Mankind, the Ummah of our Prophet Muhammad (S.A.W).

1. INTRODUCTION & OVERVIEW:

1.1 INTRODUCTION:

Focusing on the prevalent poverty reduction policies and the distinction between public and private efforts, the dissertation aims to demonstrate that public programs based on unidimensional poverty measures often are misdirected. Furthermore, use of recently introduced modern multidimensional measures can help in making more efficient efforts to counteract poverty. The disparity between the 'real poverty' as felt, faced and perceived by the poor and 'perceived poverty' defined and measured by the policy makers and politicians is explained and shown be coming from two different sets of paradigms. This dissertation shows that failure of poverty alleviation models and programs is a result of focusing on 'political poverty' instead of 'real poverty'. This discrepancy leads to misallocation of resources and efforts, resulting in aggravation of situation instead of improvement. These statements and arguments shall be validated through a review of the literature on different frequently and commonly used unidimensional poverty measures, their success and failure and support of multidimensional measures. This abstract theory will be given concrete support by using Alkire-Foster multidimensional poverty measure and analyzing time-series trends by data analysis. We will use Alkire-Foster measure adjusted to Pakistan by including country specific dimensions of poverty on the suggestions of Zaidi & Devos (1994), Malik (1996), Kemal (2003), Jamal (2005) and Haq (2005). In addition to that graphical representation of multidimensional poverty in Pakistan has been done for the first time to high light provincial disparities and time series trends with in provinces and at federal level both.[1]

The purpose of the dissertation is to argue that multidimensional measures of poverty provide a better guide to policy than the unidimensional ones currently in use. A guideline for the successful usage of multidimensional measure to design social security programs shall be proposed.

[1] This is thanks to the courtesy of Dr. Dianne Cook (Iowa State University) and my respected supervisor Dr. Asad Zaman (International Islamic University Islamabad).

1.2 IMPORTANCE OF THE TOPIC:

Whereas Poverty has traditionally been understood as simply "lack of income," recent research shows that it is in fact a complex and multidimensional phenomenon. Until the 70's, there was consensus that if people are provided with sufficient income, they will take care of all their needs, so that poverty is equivalent to lack of income. This is sometime called the rationality assumption.[2] Sen challenged conventional wisdom, and introduced the "Capabilities Approach" [Sen 1975, Sen 1977]. He disagreed with this orthodox 'rationality' and rather defined it as "the discipline of subjecting one's choices of actions as well of objectives, values and priorities to reasoned scrutiny" Sen (1977). Mahbob-ul-Haq (1973) and Sen (1975) argued that it is not money but the people who are the real wealth of a nation. Since then, many authors have argued that development is about enlarging human capabilities, rather than the acquisition of wealth. Sen called these capabilities 'functioning'. These could be elementary, like nutrition, mobility and escaping mortality etc. or complex like self respect, social inclusion etc. out of these achieved functioning (also called dimensions of human development) are those which are measureable, observable and comparable e.g. literacy, life expectancy etc.[3] This point of view suggests that, instead of focusing on income alone, the government should be focusing on all dimensions of poverty including education, health, water & sanitation, housing etc. Thus, policies should be chalked out to help those who lose their children to diseases due to lack of clean water or who die with delayed or no provision of health facilities, people who are jobless due to lack of education or are unable to make both ends meet. The study proposes to examine multidimensional poverty in Pakistan for the

[2] Conventional economics defines rationality as internal consistency of choice, maximization of expected utility and maximization of self-interest. Massive evidence from behavioral economics shows that these axioms do not accurately describe human behavior. Furthermore, as discussed by Sen (1977) in "Rational Fools," behavior according to these axioms would be foolish in many human contexts.

[3] See Alkire & Foster (2007), Sen (1999), Nussbaum (1998), Rawls (1993), Doyal & Gough (1992) and Finnis (1987) Narayan Parker (2000) and Camfield (2005) for various aspects of these dimensions. each one of them has listed some basic dimensions of human development.

determination of whether multidimensional poverty measure can be successfully adapted for use in poverty measurement and alleviation programs. Specifically we will focus on the following research questions:

Q # 1. In what ways does the multidimensional poverty picture differ from the one presented by unidimensional poverty measures?

Q # 2. Can multidimensional poverty provide a better guide to policy than conventional unidimensional poverty measures?

The importance of the topic stems from its area of focus and purpose. Focusing on the differences between the unidimensional and multidimensional poverty and outlining the set of Pakistan specific dimensions of poverty requiring focused attention, the dissertation's primary purpose is to prove the possibilities and imperatives of the social security programs adoption of 'multidimensional-dimension focused alleviation strategies'. The dissertation derives primary importance from consideration of the relationship between poverty definition and its alleviation strategy. Measuring temperature with a defective thermometer is not going to be a good guide to appropriate cures; it is even worse if what is needed is the WBC (White Blood Cells Count). To measure something we need to have a proper measuring unit, and correct instrument, for measuring the appropriate object. Insofar as it proceeds from an acknowledgement that poverty definition leads to its measurement technique and design, poverty alleviation programs' success depends upon the correct pinpointing of poverty itself. Within the context of relationship of correct poverty measure and poverty alleviation, this present study is important.

1.3 STATE OF THE FIELD:

The greater majority of studies in the area of poverty measurement have focused on unidimensional poverty measures especially head count ratio, income gap ratio and Foster-Grear-Thorbecke measure (FGT), just as the majority of the literature on poverty measurement and alleviation

programs has focused on evaluation of these programs on the basis of their mode of action and results. There exists, a small body of academic literature which focuses on the need of a proper definition of poverty especially multidimensional before planning an alleviation measure. This dissertation aims to contribute to the aforementioned literature by making a case for applicability and measurability of multidimensional poverty in Pakistan and then designing a social security measure on its basis.

1.4 DATA & RESEARCH PROBLEMS:

The aim of the dissertation is to explore the currently available data and possibilities of replicating Alkire-Foster multidimensional poverty measure[4] in Pakistan and also to see time series trends of multidimensional poverty in Pakistan over the past decade. This was first done using PDHS data set 2006-07. However, due to non-availability of the previous year's data sets for decade a shift was made to HIES (household and income survey data)/PSLM data sets.

Ideally speaking to study poverty panel data is required. However, no panel data for the required dimensions of poverty is available. Pakistan Institute of Development Economics (PIDE) has started to develop panel data sets (PSES). But that only has two rounds which are not sufficient yet to study time-series trends.

The data analysis is therefore limited in this regard. However, it gives clear insight into multidimensional poverty in Pakistan and helps effectively see changes in different dimensions over time for various data sets available.

Application of multidimensional poverty index by Alkire on single data set has been criticized by Ravallion (2010) and Devarajan (2010) on the fact that this index has been

[4] See the section 2.1.1 sub section Alkire-Foster measure for the details of Alkire- Foster measure (2007).

constructed using single data set. They have argued that if a combination of data sets is done robustness of the index can be checked further. I have sought to overcome this particular problem or limitations through using different HIES/PSLM data sets (1998-99, 2001-02, 2004-05, 2005-06) to study time-series trends. Though as mentioned above sample size and respondents are different for these data sets, basic questions and data gathering techniques are the same due to which both depth and intensity of multidimensional poverty was measureable.

Using different data sets and analyzing trends of dimension-wise time-series trends of poverty in Pakistan is a positive contribution of my research.

1.5 DISSERTATION OUTLINE:

The dissertation will be comprised of five chapters. Following the chapter of introduction, which outlines the nature of the study, chapter 2 will present reviews on related literature on theoretical and technical aspects of poverty; its nature, selection of poverty line, methodological issues and different unidimensional poverty measures. It will also present the history and evolution of poverty measurement in Pakistan. Chapter 3 will present measurement of multidimensional poverty in Pakistan using Alkire-Foster measure and showing trends over past decade. Finally chapter 4 will conclude the study through articulation of research findings, discussion of the implications of the findings and the presentation of a set of recommendations.

1.6 SUMMARY:

As the current chapter has sought to explain, the dissertation shall focus upon poverty definition, measurement technique and the difference between perspectives of poor and those trying to help the poor. Our main finding is that the disparity between unidimensional poverty

alleviation strategies and multidimensional poverty leads to failure of these programs. Defining poverty on multidimensional basis and selecting correct dimensions to build that measure will lead to efficient allocation and usage of resources and removal of poverty. As Thorbecke (2005) has explained drawback of different poverty measures and suggested lines for multidimensional poverty measures followed by Alkire and Seth (2007) in India, who have shown that multidimensional poverty measure gives the true deprivation picture of the population in different dimensions of poverty. Secondly they also showed that this measure showed more depth of poverty as compared to unidimensional poverty measures which can be misleading. My main aim is to check these results for Pakistan and focus on dimensions which need attention on priority basis.

2. LITERATURE REVIEW

2.1 POVERTY: THE INTERNATIONAL REVIEW:

2.1.1: POVERTY DEFINITION AND ITS EVOLUTION:

Poverty is one of the global issues for all economies. Traditionally it was thought that having income meant development and low or no income was equal to being poor. It was assumed that people would take care of their basic needs, education, health, and all relevant factors needed to relieve poverty. Thus poverty was a unidimensional phenomenon, measurable solely by income. However, it has been realized more recently that people may have adequate income but nonetheless fail to have adequate health, education, or other essentials. At the same time, some who do not have adequate income may be well provided for in many dimensions. Below we review some of key concepts related to poverty which have been discussed in the literature, as they relate to our thesis.

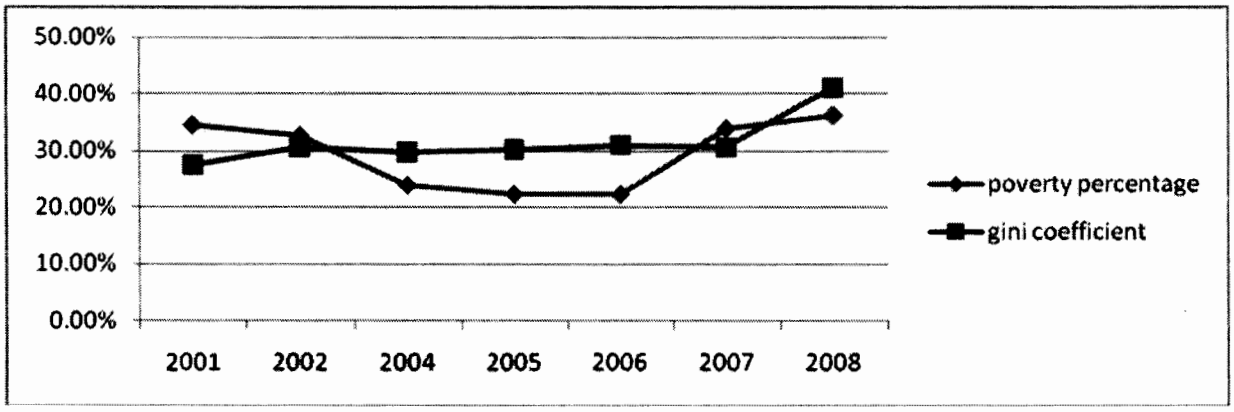
UNIDIMENSIONAL MEASURES:

POVERTY & INEQUALITY:

It is of primary importance to distinguish between poverty and inequality. People often take relative poverty as inequality and therefore have this misconception that it can never be removed: that is, there will always be poverty at the bottom ten percent of the income distribution. This is no doubt a fact that reduction of relative poverty requires redistribution of income as an absolute necessity and this leads to decrease in inequality. Secondly it is also true that both inequality and relative poverty cannot be reduced by economic growth alone; only redistribution policies can remove relative poverty. Nonetheless, a considerably unequal

economic society can be just and poverty free (Piachaud, 1988). Inequality is measured by Gini coefficient, which measures regions and countries' income distribution between 1-0 where 1 is most unequal and 0 is most equal. Poverty on the other hand is measured, indicated and conceptualized very differently. Zaidi (2008), using the data from MHCHD, UNDP and Economic Survey of Pakistan (various issues) has also made important declarations about poverty and its interrelation with inequality and growth. He has also shown that poverty and inequality are two different measures and they do not necessarily move in the same direction or for that matter, have any clear relationship. For Pakistan these two variables have behaved very differently over past decade. According to the claims of Musharaf government poverty had declined from 35% to 22 % from 2001 to 2006 and then there was a sharp increase to 36% till 2008, whereas inequality has been rising continuously since 2001 from 27% to 40% till 2008. As shown in (Table 2.1, pg 36) when graphical trends for both these concept were seen in FIG 2.1, both concepts showed different trends, and must be clearly differentiated for an accurate analysis.

FIG 2.0: TRENDS OF POVERTY & INEQUALITY IN PAKISTAN OVER PAST DECADE



Source: Table and sources of the data can be referred to Table 2.1, pg 36.

HEADCOUNT RATIO:

Second aspect was the poverty measurement index. There is a huge literature on this topic.[5] Some Axioms have been developed to assess the indices which have been, and continue to be developed. For details, consult Clark (1981) Nunes (2008). Over time many unidimensional poverty indices were developed and used. Some became redundant and unpopular while others are still in use. Most popular and frequently in use index since Booth (1889) and Rowntree (1901) is the **Head count ratio**. It is represented as [H(x,z)= q/n] where 'q' is the number of poor below the selected poverty line (as per the selected definition for study) and 'n' is the total sample population. This measure counts the incidence of poverty but fails to measure inequality, depth and severity. Advantage of this measure is that even though it is country specific, if an international poverty line (1 $ a day) is used then it can be used for international comparative studies. However, due to purchasing power parity international poverty line needs to be translated into local currencies after adjustments.[6] In spite of its frequent use, Sen (1976, 1981) criticized the headcount ratio measure of poverty by pointing out its weakness in the area of distributional considerations among poor, meaning that it ignores how far down the income of poor varies from the poverty line. Secondly it violates the axioms of monotonicity (increase of

---

[5] **On Indices for the Measurement of Poverty** Stephen Clark, Richard Hemming and David Ulph *The Economic Journal*, Vol. 91, No. 362 (Jun., 1981), pp. 515-526
(article consists of 12 pages) Published by: Blackwell Publishing for the Royal Economic SocietyStable URL: http://www.jstor.org/stable/2232600
Measuring Pro-Poor Growth Martin Ravallion and Shaohua Chen *Development Research Group, World Bank* August 2001On the Measurement of Poverty Author(s): A. B. Atkinson Source: Econometrica, Vol. 55, No. 4 (Jul., 1987), pp. 749-764 Published by: The Econometric Society Stable URL: http://www.jstor.org/stable/1911028 Accessed: 07/09/2008 21:55c

[6] See Deaton (2010) for the detail of this aspect. Deaton has described the reason for the frequent use of this index by the international donor agencies as an easy excuse for channelizing of development funds and easy escaping of monitoring due to surface analysis of the index.

poverty index with reduction of income of someone below poverty line) and weak transfer axiom (decrease in the poverty index with transfer of income from rich to poor in such a way that poor still remains under poverty line). Alkire-Foster measure of multidimensional poverty (to be explained in chapter 4) applied in my research is also a head count ratio but is adjusted to cater for both these axioms.

INCOME GAP MEASURES:

Another unidimensional poverty index according to Batchelder (1971) is **Poverty Gap index**. It is the aggregate difference (g) of income (x) below a certain poverty line (z).

$$g_i = \sum (x_i - z_i)$$

It has been a really attractive index for policy making as it gives the amount of money required to bring everyone out of poverty. Sen (1976) has shown that if poverty gap index is expressed as difference of average incomes of the poor it becomes **Income-Gap ratio.** He himself has criticized both poverty and income gap ratios in Sen (1981) on the basis of insensitivity to distribution among poor which he called the damaging limitations. He further has criticized these measures for violating the focus axiom (cannot tell what proportion of income of rich is required to wipeout poverty as it is only a measure of poor and not the general poverty of nation).

On the other hand income-gap ratio is supported by Gottschalk, Smeeding and Timothy (1997). They say that, this measure is based on the principles of fairness (no drastic difference in basic well-being or human dignity), warrant (getting what is deserved), democracy (no social stratification), positive liberty (freedom of expression) and self-interest (if inequality prevails it will lead to political and social instability). It measures inequality along with incidence of poverty but even they have admitted to its failure to measure the depth or severity of poverty.

COMBINED UNIDIMENSIONAL MEASURE:

Over time these unidimensional measures were reorganized by Foster, Greer & Thorbecke (1984) as **FGT index.** It is represented as [FGT= $(1/n) \sum_{i=1 \text{to } q} ((z-x_i)/z)^{\alpha}$]. This is actually a combination of several measures. Depending upon the non-negative values of α FGT measures take different names and satisfy different properties. For example if $\alpha = 0$ it is called head count ratio and measures the incidence of poverty. If $\alpha = 1$ then it is poverty gap ratio and measures the depth of the poverty. If $\alpha = 2$ then it represents squared poverty gap index which measures the intensity of poverty. None of the above measures captures all aspects of poverty measuring its incidence, depth, intensity and decomposition. All the criticisms apply on various FGT measures as summarized earlier. Note that one could use FGT (0), FGT (1) and FGT (2) all three simultaneously – this would then become a multidimensional measure.[7]

MULTIDIMENSIONAL MEASURES:

NEED FOR MULTIDIMENSIONAL MEASURES:

Above discussion and critical analysis of unidimensional poverty measurement makes it clear that over time the need for the development of multidimensional poverty measures was felt (see Nune (2008), Silber (2007), Alkire & Foster (2007). Recently, the understanding has emerged that money alone cannot alleviate poverty (UNDP 2003, Silber 2007). Major credit of this understanding goes to Sen's capability approach (1976) and seminal work of Mahbob-ul-Haq (1973), where dimensions like life, knowledge, work and play, relationships, spirituality, participation, inner peace, appreciation of beauty and harmony with the outer world are given

[7] For detailed discussion on this aspect see Theorbeck 2001

central importance (Alkire 2007). Since the influential work of Haq and Sen World Bank, International Labor Organization and other such institutions have been trying to develop better measures to focus on this multidimensionality of human needs.

Sen (1981) in his book *Poverty and Famines: an Essay on Entitlement and Deprivation* explains this failure of policies by pointing out the fact that if 'rights' are only defined but not supported with required 'functioning' for the real freedom for decision making, whole exercise is futile. According to him in the first place, poverty and famine are not due to scarcity: 'not being enough' but distribution: 'not having enough', where former can be a cause of latter but may not the only one. He has explained that poverty in the world is not due to lack of a shortage of resources but their unequal distribution and entitlement issues. Even if minimum basic need covering income is given to everyone, it is not guaranteed that individuals would actually allocate their incomes so as to purchase basic needs bundle.

Banerjee & Duflo (2007) have shown that having or not having incomes is only one aspect of poverty; another area of concern which cannot be ignored is the spending pattern of the existing income. They have studied the spending behavior of extremely poor (less than 1 $ a day income) and poor (less tha 2 $ a day income) over 13 different countries including Pakistan. It is a common misconception that poor spend their incomes to get much needed food and non-food requirements. This study however, showed that only around 56-78% incomes of poor and non-poor in rural areas is spent on needed calories and in urban areas this calorie intake gets 56-74% share. Rest of their incomes surprisingly is not spent on non-food basic necessities but alcohol, tobacco, festivals and entertainments like movies, theater or video shows take a major chunk of the remaining incomes of extremely poor and poor class. In either case poor saw themselves to

be having a significant choice, but they choose not to exercise that choice in the direction of spending on food and non-food basic necessities. This is also supported by Thorbecke (2001) who has explained that sometimes individuals allocate their incomes to satisfy wants for alcohol and tobacco at the expense of satisfying the basic needs of their families. This defies the basic assumption of income approach.

Gradual shift from unidimensional measures to multidimensional ones is a result of such efforts. Significant criticisms of the Gross Domestic product (GDP) [monetary worth of final good and services produced in a country in one year] have led to the development of the alternative Human Development Index (HDI) [based on three components education, longevity and income per head] as a tool to measure and compare development levels of countries. Mahbob-ul-Haq's HDI is a step on the path to better measure of poverty, it has certainly broadened the empirical attention; however, it is widely agreed that human development extends beyond these domains. Alternately we can say that three dimensions focused by the HDI for measuring wellbeing of humans are not sufficient.[8] Therefore there is an absolute need to accept multidimensional definition of poverty and understand and study each dimension individually in detail.

My research has taken a step forward in this direction, by providing a variant of Alkire-Foster measure (2007). Alkire- Foster measure (AFM) (2007) is a measure which is adjusted FGT measure to multidimensionality. It involves normative judgments at three stages of dimension selection, poverty line selection and choice of weights across indicators / dimensions.

[8] For critical analysis of HDI read McGillivary (2005) and Ranis et al. (2006)

AFMs order of aggregation is to first do it across people and then across dimensions.[9] My research has used 6 dimensions and 10 different indicators depending upon data availability in Pakistan. Here, I have also developed time-series trends of this multidimensional poverty over past decade in Pakistan, showing province-level breakdown and dimension wise fluctuations over time.

2.1.2: POVERTY DEBATES AND ISSUES:

Poverty is a topic with non ending debates apart from the definition debate i.e. whether poverty is unidimensional or multidimensional phenomenon; there are other prominent issues for developing a poverty index.

UNIT OF ANALYSIS:

As far as the unit of analysis is concerned the criticism on average poverty measures is that they do not show the true individual level picture. Averages for society as a whole do not capture individual level variations. Data is available on household basis, but Sen has shown that their can be inequalities within a household; male children may get enough food, while females do not. This suggests that one should do analysis at an individual level, but data on this level is scarce. Alkire (2008) has stressed the point that as far as possible individual should be the unit of analysis instead of house hold.

[9] Bourguignon & Chakravarty (2003) have however, preferred aggregation first against dimensions. this nevertheless is the issue of personal preference as it does not technically impact the measure.

RELATIVE VERSUS ABSOLUTE POVERTY:

Second is the issue of deciding the type of poverty. Whether we consider poverty to be an absolute, relative or hybrid (a combination of absolute and relative) phenomenon?[10] Ravallion (1998) has defined absolute poverty as a poverty line with fixed value over time and space. For example, World Bank's income based 1 $/ 2$ a day definitions.[11] The two main types of absolute poverty measures in use are food & energy intake (FEI) method[12] [poverty line by computing level of consumption or income expected to satisfy the normative nutritional requirements] and cost-of-basic-needs (CBN) method[13] [poverty line set by computing cost of food basket and an allowance for non-food consumption]. Where CBN is a consistent approach, EFI has to its credit specificity. However, both have their draw backs. CBN trying to be consistent ignores the real representation of tastes, and preferences of poor and EFI even with specificity cannot be measured precisely. On the other hand basic-need approach is a better representative of real tastes and preferences of poor. Nevertheless, it is not only very cumbersome in measurement (ex-ante not ex-post functioning) but also cannot easily entertain non-tangible attributes. If in ex-post functioning a person may not choose right functioning (like a drunken head of a family). Thorbecke therefore concludes that non-monetary and non-tangible attributes of poverty are hard to measure via both money-metric and basic-income approaches. Real issue is to set objective standards for these attributes. Inter-regional and inter-community variability of these attributes is

[10] For a detailed discussion on this issue see Foster (1998)

[11] These were introduced for the first time by Martin Ravallion in world development report 1990 of the World Bank.

[12] FEI was first introduced by Greer and Thorbecke in 1986

[13] Ravallion 1994 used CBN approach for the first time.

hard to grade (Thorbecke, 2001). Alkire & Foster (2007) have supported their measure of multidimensionality on the same point. They have shown that by looking at the decomposition of poverty[14] inter-community and inter-regional variability of various dimensions of poverty can be seen and measured. Results of my study also support this finding at provincial level across selected dimensions.

Practically, all aspects of human life, whether social or economic, are very much affected by poverty. For example just like lack of income, lack of education or health matters to a poor person. These factors called dimensions of poverty in my thesis are not equally important for everyone. Also, their interdependence makes a difference to their prioritizing, which is ignored by the absolute poverty measures.

Orshansky (1963, 1965) identified that income level or amount of cash to define poverty must vary with age, family size, geographical area and gender etc. She defined poverty line based on available standards for food adequacy and calculated an income-food expenditure relationship for the first time.

Relative poverty measures are the other kind. Relative poverty was first defined by Townsend (1879) as an alternative measure of absolute poverty. He admits that absolute measures as most commonly used and accepted ones historically. However, he also points out that these measures are in appropriate and misleading as people's basic needs are linked with their living environment and belonging place. According to Ravallion (1996) relative poverty rises with the average expenditure. According to many studies relative poverty measures are far

[14] It is the property of the poverty measure to depict the composition of poverty according to the dimensions, regions or any other attribute under study.

better than absolute measures (see Atkinson, 1985 & Ringen, 1988). Nevertheless relative poverty measures are not free from criticism. One major issue is that relative poverty is again measured on the basis of questions designed by the policy makers or researchers. Thorbecke (2005) has pointed out that any measures where the participation of poor themselves is not a part of designing that measure will lead to miscalculations. As relative poverty questions are lab-designed therefore poor don't have a say in telling what they actually want to. This makes relative poverty measures a defective tool.

CONSENSUAL POVERTY:

Apart from absolute and relative measures a third category now exists which focuses on the consensual nature of poverty. Saunders & Bradbury (1991) argue that poverty is a relative concept but not only that is sufficient, after this acceptance of relativity of poverty we also need to see whose judgments are to be considered in defining poverty? Not only experts should be given a chance to do so but the poor people or commoners of the society who suffer this phenomenon should be the central judge. However, this doesn't mean that experts' opinion should be excluded. Therefore they argue that should not have one absolute definition, rather it should be defined by social consensus for the economy, where it needs to be combated.

> *.....unless we can agree on a yard stick for measuring change, it will be impossible to say what has happened"*
>
> (Sawhill, 1988)

When a consensus is reached on the definition and nature of poverty and selection of the unit of analysis then the next step in measurement is the selection of poverty line. This is a very

important step. As selection of poverty line is a normative issue and it greatly affects the outcome of poverty measurement. Deaton (2010) has emphasized that changing the poverty line changes poverty level in the economy. He has quoted the example of change in poverty line in 2005 by international comparison project ICL due to which half a billion American fell under poverty line (1.25 $ a day) within seconds and it also increased inequality. Detailed discussion of poverty lines can be read in an article by Martin Ravallion (forth coming) in The New Palgrave Dictionary. [15]

2.2 POVERTY THE NATIONAL REVIEW

2.2.1 HISTORY OF POVERTY MEASUREMENT IN PAKISTAN

In 1973 Naseem using HIES data sets for years 1963-64, 1969-70 and 1971-72 calculated the trend of poverty in Pakistan for the first time over years. He used per capita annul expenditure with prices arbitrary fixed at 1959-60 as %age of Household as poverty measure. There onwards measuring poverty with their own poverty line which sometime gave different results, some showing decline and others increase over the same time period. Allaudin (1975) used per capita income (%age of H.H) as poverty measure. Naseem (1977) measured poverty using 95%, 92% & 90% of 2100 calories. Mujahid (1978) replicated the study done by Naseem (1973) with different data sets. In 1980's researchers tried to use various data sets with same poverty measures to see changes in poverty over time. Irfan & Amjad (1984) did two different studies using 2550 calories (% of population) as poverty measure. Malik (1988) did three different studies using various data sets using per caita expenditure on 2500 calories + non-food

[15] Thorbecke (2001, 2004) can be read to understand the debates about poverty, quantitative and qualitative aspects as well as vulnerability.

expenditure (%age of population). Kruijik & Van (1985) used a very different poverty measure comprising of monthly expenditure of Rs. 700 at 1979 prices %age of household, during same period. This continued into ninties where the search for a better measure was continued and a shifting from income based measures to basic needs approach was seen. Altaf, Ercelawn, Bengali & Rahim (1993) used food and non-food expenditure as poverty measure with cut-off at Rs. 355/month/adult. Gazdar (1994) & Shirazi (1995) used basket of basic needs (%age of population), Zaidi & Devos (1994) used 50-75 average equivalent expenditure as poverty line. Amjad & Kemal (1997) in their various studies used per capita expenditure (2500 calories+ non food expenditure as %age of population, Ali (1997) in various studies used utility function based poverty line, Ahmed (1993), Jafri & Khattak (1995) and Jaffri (1999) continued this by using basic needs based expenditure. All of the above mentioned studied used average measures of poverty measurement.

However, those who had used average measures were under the criticism of ignoring individual level poverty [where poverty is very much an individual phenomenon], basic needs and food intake remained the two most commonly used measures over this time. Need for a deeper, composite and easy to use measure was still felt. Start of 2000's saw different measures in research. Studies done latter on along with these two measures started using poverty gap measures out of which adjusted headcount ($\alpha = 0$) FGT measure became most favorite, being focused on all three aspects of poverty measures previously in use [see Anwar & Qureshi (2002)].

Further details of the literature review can be seen with Ahmed (1995), Gazdar (1994) & Malik (1992). However, all these measures used are unidimensional and are unable to provide a

true, deep and diverse picture of poverty. Ali (1995) has graded all these unidimensional measures using studies into two major categories. Those using arbitrary fixed poverty lines and those centered on calorie-based approach or food poverty line FPL. However, there are some who have tried to use total poverty line TPL which is a combination of FPL and basic non-food requirements. Qureshi & Arif (2001) have rightly argued that without panel data and constant evaluation long term study no effective poverty measure can be done. They have focused on different variables for poverty measurement which included food, clothing, housing, health, education; transportation and recreation in line with the basic needs approach. Choice of variables to construct poverty measures did not vary much over the years. Almost same variables were used by Zaidi & Devos (1994) and Malik (1996). Need of using multidimensional poverty measure was felt since beginning but due to various data limitations and research trends this was not pointed out directly until 2000's. Haq (2005) states that poverty has multiple expressions and dimensions, which arise because of equally multiple causes of poverty. With such multidimensional nature of problem how can we measure it with unidimensional (or average) qualitative or quantitative measure. She stresses that similarly for designing poverty combating policies, all routes matter both economic and non-economic. Causes of poverty should be studied at local or provincial levels and fought against there and then. Participatory designing of programs at local level are needed to do so.

Jamal (2005) focused on dimensions which he called predictors of poverty used variables live demography, education, occupation of head, assets and housing quality using OLSQ regression and Logical regression to find district level information. Haq (2005) also focused on the need of multidimensional poverty which she measured using FGT measure focusing on the variables like education, employment demography, housing, source of drinking water and type of

toilet facility. My thesis is using same variables (with some variations to fit Alkire-Foster 2007 measure) for building a multidimensional measure of poverty for Pakistan.

Income however, has not been included as a dimension of poverty directly because firstly, as the analysis is based on capability approach and income is not a capability itself, rather a means to attain these capabilities. Thorbecke (2001) argues that having income does not underwrite good living standards. Sen (1999) further enhances the fact the income is not a capability but means to attain capabilities like education, health, social inclusion etc. In his book "development as freedom" he has pointed out an indirect way of measuring income which he called 'indirect measurement approach'. He said that thought it is an ambitious approach but nevertheless it is focused on familiar space of incomes, appropriately adjusted. In this approach information on the determinants of capabilities other than income can be used to calculate "adjusted incomes". As multidimensional poverty index is constructed on the theoretical base of Sen's capability approach. It is rather suitable to use indirect measurement approach in this thesis. Secondly, Sen (1979, 1984) says this procedure relates to general literature on 'equivalence scales'. It also connects with research on analyzing family expenditure patterns for indirectly assessing causal influences that may or may not be observed otherwise.

Secondly many researchers including Alkire and Foster (2007) who created this index also used indirect measurement approach for income measurement for building multidimensional poverty index[16]and they also have not included income as a dimension in their analysis. Lastly,

[16] Also see Alkire & Seth (2008), Foster (2010), Alkire & Santos (2010), Seth (2009) for different uses of multidimensional measures.

major criticism faced by human development index (HDI) is multi-co-linearity issue faced by the addition of proxy variable (income) which makes the analysis biased.

Concluding the above discussion there is not a single general picture of poverty agreed upon by everyone. However, for simplicity sake income poverty definitions of less than 1$/2$ a day are generally in use. This does not solve the issue of contradicting analysis about trends of poverty. Where most of the authors accept the limited income poverty definitions by World Bank, disagreements are there as per above discussion. The results about the poverty trends in Pakistan have been disputed. Keeping the poverty line same if the model of poverty measurement changes this leads to change of poverty level and trends for the same years. For example see 1973 Naseem and 1977 Naseem. 1973 Naseem and 1984 Irfan and Amjad. 1973 Naseem and 1975 Allaudin. If poverty line changes leads to change in poverty level. 1977 Naseem, 1984 Irfan and Amjad, 1988 Malik, 1988 Ercelawn. Sometimes same model and poverty line gives different results for poverty \level and trend for same year by different researchers. 1973 Naseem, 1978 Mujahid. If unit of analysis changes this leads to poverty level even if model and poverty line remains the same. 1990 Ahmed and Allison. Models are all one way or other income dependent or unidimensional even basic needs approach model of calorie intake is dependant on level of income needed to support that expenditure.

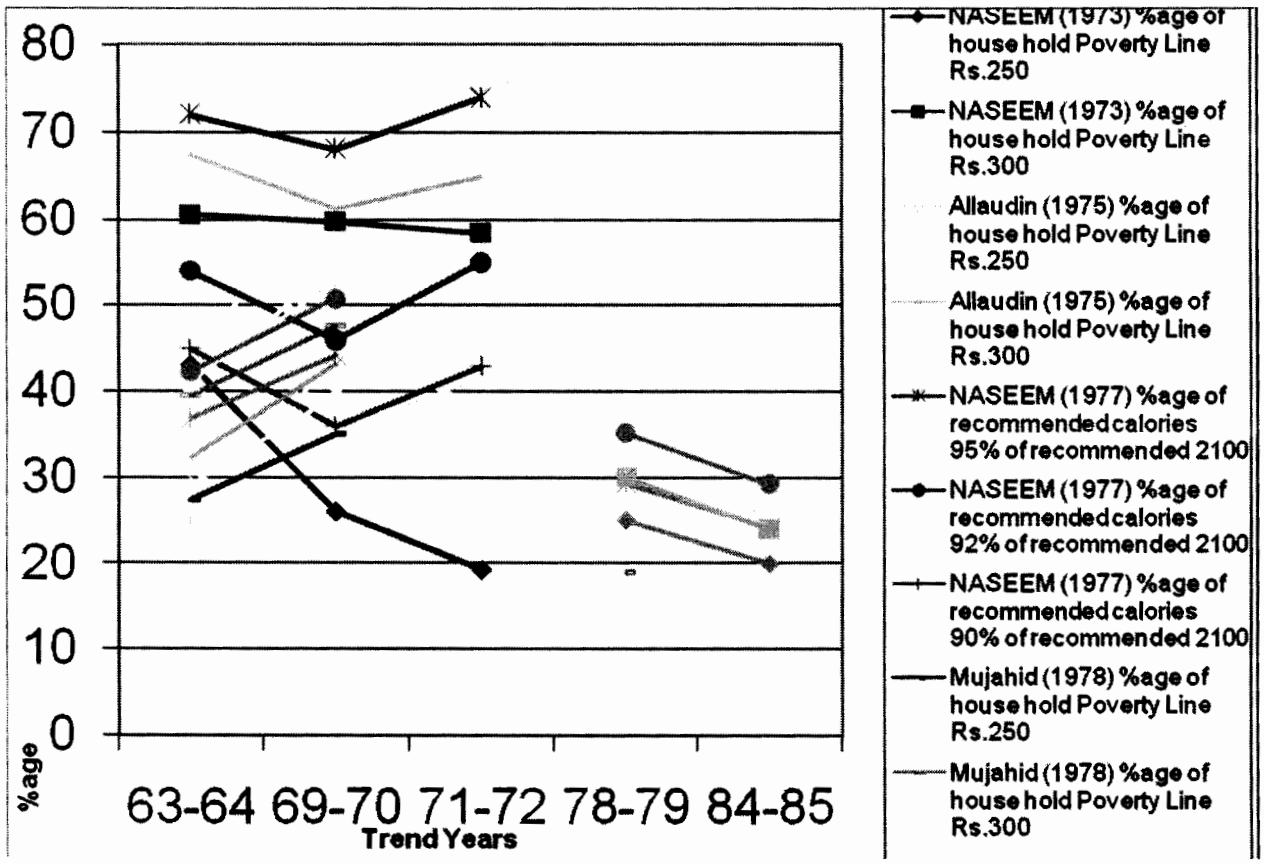
TABLE 2.0: SUMMARY TABLE FOR PAST POVERTY TREND STUDIES

TREND YEAR	NASEEM (1973)		Allaudin (1975)		NASEEM (1977)			Mujahid (1978)			
	%age of house hold		%age of house hold		%age of recommended calories			%age of house hold		%age of Population	
	Poverty Line Rs.250	Poverty Line Rs.300	Poverty Line Rs.250	Poverty Line Rs.300	95%	92%	90%	Poverty Line Rs.250	Poverty Line Rs.300	Poverty Line Rs.250	Poverty Line Rs.300
63-64	43.1	60.5	56.5	67.4	72%	54%	45%	27.4	39.5	29.2	41.6
69-70	26	59.7	35.6	61.1	68%	46%	36%	35	47.6	39.5	52.6
71-72	19.2	58.41	41.6	64.8	74%	55%	43%	-	-	-	-
78-79	-	-	-	-	-	-	-	-	-	-	-
84-85	-	-	-	-	-	-	-	-	-	-	-
MODEL	Per Capita Annual Expenditure (arbitrary fixed 1959~60 prices)		Per Capita Annual Income(arbitrary fixed 1959~60 prices)		Calorie intake per head (2100)			Per Capita Annual Expenditure (arbitrary fixed 1959~60 prices)			

TREND YEAR	Irfan & Amjad (1984)		Malik (1988)		Ercelawn (1988)			Ahmad & Allison	
	%age of recommended calories		%age of House Holds		%age of recommended calories			%age of House Holds	%age of population
	Poverty Line Rural poor Rs. 109	Poverty Line very poor Rs. 95	Poverty Line Rs. 159	Poverty Line Rs.172	Poverty Line Rs.324	Poverty Line Rs.960	Poverty Line Rs.1716	Poverty Line Rs.100	Poverty Line Rs.100
63-64	40.9	32.2	36.79	42.3	25%	-	-	-	-
69-70	54.5	43.2	44.24	50.76	-	-	-	-	-
71-72	-	-	-	-	-	-	-	-	-
78-79	41.2	29.3	29.23	35.19	-	19%	-	25%	30%
84-85			24.1	29.21	-	-	20%	20%	24%
MODEL	Monthly Per Capita Income consistent with Minimum intake (2500 calories) at 1979 prices		Monthly per Capita Consumption at 84-85 prices		Per capita annual expenditure for 2550 calories per day			Per capita monthly expenditure at 1979 prices updated to 84-85	

- Table created from information taken from Malik (1992)

FIG 2.1: SUMMARY TRENDS OF POVERTY BY PREVIOUS STUDIES



2.2.2 POVERTY ALLEVIATION MEASURES IN PAKISTAN

Poverty alleviation programs in Pakistan can be categorized into four major categories: programs generating income and employment opportunities, social and human development, infra structure & community development programs and social protection or security measures.

Irfan (2003) has explained the structure of social security and insurance in Pakistan and stresses their role in poverty reduction. He quoted article 38 d and e of constitution of Pakistan which makes it the responsibility of the government to provide food, clothing, housing, education and medical relief to the people of Pakistan. To fulfill these responsibilities, many

different poverty alleviation programs[17] are being run in Pakistan. Irfan has divided them into three major categories. Social security schemes for government employs; these include pension for government servants (persons with 25 years of active service or 60 years of age at their retirement receive pension and other benefits under pension funds scheme), civil servants pension, general provident and benevolent fund, employees old age benevolent fund and other private companies pension, Micro credit schemes and transfers to poor including Zakat, Bait-ul Maal and other programs.[18]

EVALUATION OF POVERTY REDUCTION POLICIES:

Irfan (2003) concludes that these programs have failed to give satisfactory results because of their negligible funding, design problems, issues in beneficiary selection, management and governmental issues, limited coverage, inadequacy, cost ineffectiveness, limited or low sustainability and limited options with policy makers due to bindings of structural adjustment and globalization programs, which make the poverty alleviation failures to be repeated. He points out the need of efficient allocation of resources to undo these adverse effects. Efficient targeting of funds and programs to pressing needs can only be done if real dimensions of poverty and their depth and severity along with their regional variability are known.

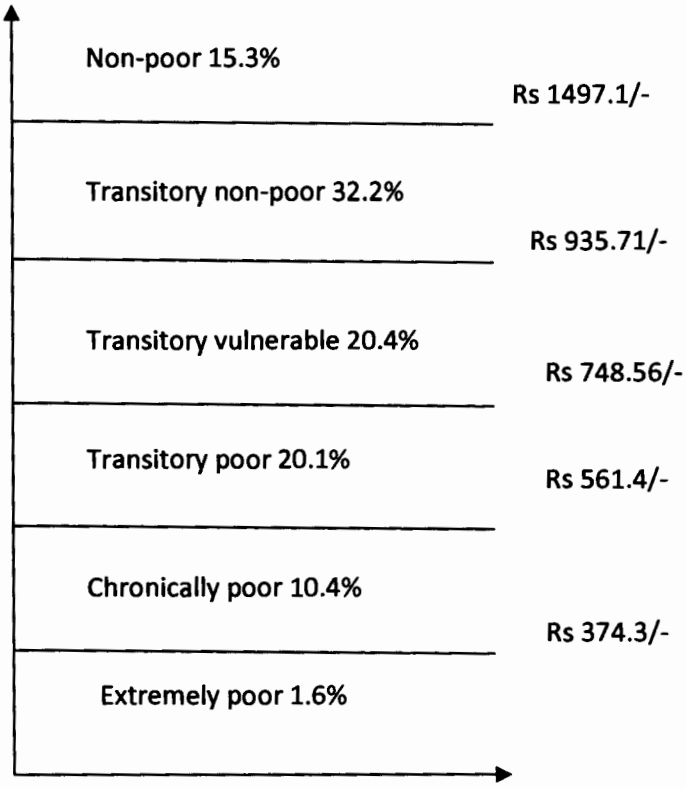
Failure of these measures is evident from the existence of poverty and a very high percentage of poor or vulnerable population. Fig 2.1 shows that only 15.3% of Pakistani population was non-poor (earning more than 1497.1 Rs per day) and out of danger of falling into

[17] Details of these programs are courtesy to Mahbub-ul-Haq center of human development , development report of South Asia 2006 (HDRISA 2006) and Dr. Irfan (2003).

[18] For details of poverty alleviation programs in Pakistan See Annex 3

poverty soon. Rest of the 84.7% population was either poor (earning less than 561 Rs per day) or at the verge of poverty (earning from 748 to 935.71 Rs per day).

Fig 2.2 CLASSIFICATION OF POPULATION ACCORDING TO POVERTY 2006



Source: CRPRID

Furthermore if we look at Table 2.1 the poverty %age (measured using basic needs approach), expenditure on welfare programs and Gini-coefficient we will realize that even though the welfare expenditure over these years (2001-2009) increased poverty varied in both directions. It decreased till 2006 and then increased. And the Gini-coefficient also fluctuated between 0.27 -0.41 which also indicated the worsening of situation as far as inequality was concerned.[19] In 2010 year Pakistan is faced by dual featured problem of rising poverty and

[19] See fig 2.0 on pg 18 for graphical representation.

inequality, cementing the conclusion of failure of the above discussed poverty alleviation strategies and measures.

Table 2.1: TRENDS OF POVERTY, INEQUALITY AND WELFARE EXPENDITURE

Years	Welfare expenditure (budgetary + non-budgetary) Rs	Poverty (%age)	Gini-coefficient (0-1)
2001	166074 + 7669	34.5%	0.2752
2002	209043 + 11938	32.6%*	0.306
2004	316243 + 17912	23.9%	0.2976
2005	378139 + 17912	22.3%	0.3018
2006	42668 + 21916	22.3%	0.30**
2007	572620 + 26974	33.8%	0.306
2008	550 billion	36.1%	0.41

Source: PRSP II finance division, economic survey of Pakistan (Various issues), World Bank data source, CIA fact book * wikipedia:en.wikipedia.org/.../List_of_countries_by_**percentage**_of_population_living_in_**poverty**

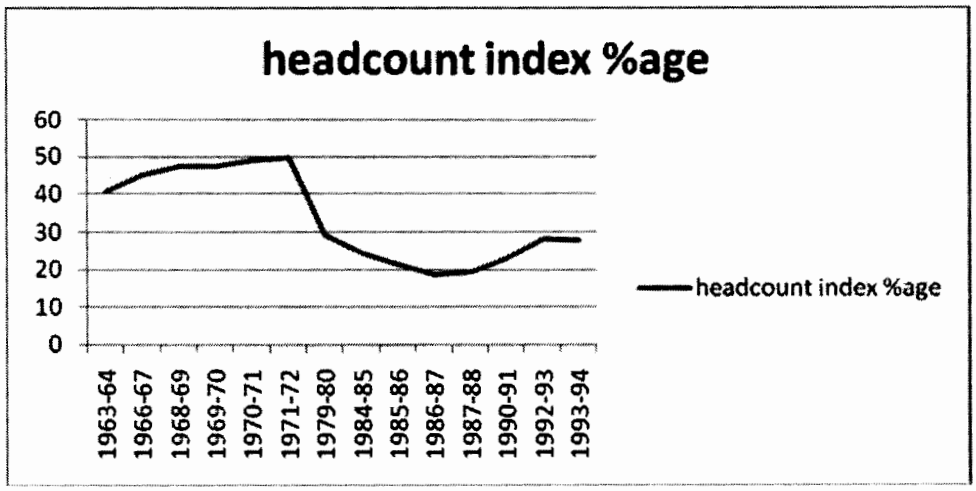
** **average of years 2005, 2007.**

2.2.3 CAUSES OF FAILURE OF POVERTY REDUCTION STRATEGIES IN PAKISTAN

As discussed earlier poverty in Pakistan is multidimensional phenomenon and is a growing concern. Although the middle-class has increased in Pakistan, nearly one-quarter of the population is classified poor as of October 2006 human development report for Pakistan by WB. As of 2006, Pakistan's Human Development Index (HDI) is 0.539, higher than that of nearby Bangladesh's 0.530, which itself was formerly a part of the country. Pakistan's HDI still stands lower than that of neighboring India's at 0.611. Incidences of poverty in Pakistan rose from 22–

26% in the fiscal year 1991 to 32–35% in the fiscal year 1999. They have subsequently fallen to 25–26% according to the reports of the World Bank and the UN Development Program reports. These reports contradict the claims made by the Government of Pakistan that the poverty rates are only 23.1% (2006). The CIA fact book places the 2006 poverty rate at 24 percent.

Fig: 2.3 TREND OF POVERTY SINCE 1963

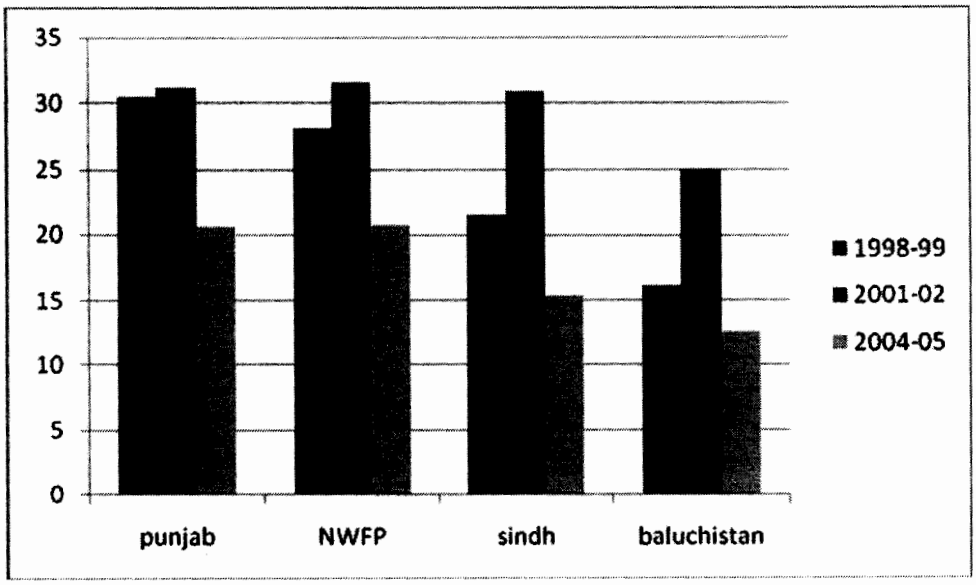


Source: PRSP II finance division, economic survey of Pakistan (Various issues)

Various sources have claimed on the basis of conventional money metric unidimensional poverty measures that poverty has decreased in Pakistan over years. On the contrary, a major portion of Pakistan's population suffers from deprivation, poverty and hunger. I have shown by using different dimensions over past decade that this claimed decline of income poverty shows a very contrasting picture from basic necessity deprivations. Alkire-Foster multidimensional poverty index calculated in my study shows not only worsening of the situation but also trends of these dimensions over provinces. When income poverty as head count ratio is seen for provinces this contradiction is very obvious. As not only order of poverty is changed but also Baluchistan

seen as the least poor province according to headcount ratio is the most deprived one when multidimensional picture is used.

Fig: 2.4 PROVINCE WISE POVERTY DISTRIBUTIONS



Source: PRSP II finance division,

Poverty in Pakistan is not only multi-dimensional but also fluctuates substantially with time and region. According to Human Condition Report 2003 prepared by the Centre for Research on Poverty Reduction and Income Distribution (CRPRID), an institute under planning commission of Pakistan, poverty in Pakistan shows a very depressing picture especially in the areas of education, health and sanitation presenting quite a different picture from the (manipulated) government figures. With 6 million children between 5-9 years of age out of school, high maternal mortality rate (400 per 100,000 live births), 45% Pakistani population with out access to adequate health care, 40% do not have adequate drinking water and 55% lacking

sanitation facilities, 75% female population being illiterate (when a person able to write his/her name is considered literate) is not a very impressive picture.

Another aspect of poverty in Pakistan is the disparity between different regions and classes. Zaidi (2008) in his book Issues in Pakistan's Economy has touched upon this issue. According to him there is a considerable amount of diversity in the level of poverty between rural and urban areas within provinces as well. Incidence of poverty is highest in the landless households of rural areas which constitute 70% of the rural population. Rural NWFP has highest head count ration (45%). North Punjab has lower level of poverty that Sindh which in turn is better than southern Punjab. Zaidi has attributed this diversity in the level of poverty to natural and infrastructure endowments, on the distribution of resources within a region, and the structure of the economy. He also thinks that institutional structures and arrangements, and regional policy variables, both in the private sector and public policy influence poverty as well. [Some of this urban/rural disparity could be due to an income based poverty definition. Lots of rural production and services is not marketed so does not get evaluated as part of income.

Zaidi, using the data from MHCHD, UNDP and Economic Survey of Pakistan (various issues) has also made two important declarations about poverty and its interrelation with inequality and growth. Firstly he has also shown that poverty and inequality are two different measures and they do not necessarily move in the same direction or for that matter be related at all.[20]

[20] See for details annex 4

Secondly, the claim *"economic growth is essential prerequisite for poverty reduction"* (Agricultural Development Bank 2004) has been incorrect in case of Pakistan. He has shown that only during 1980's and early 90's economic growth and poverty reduction have shown opposite movement. Therefore he has rejected *"trickle-down effect"* as a practical theory of poverty reduction in Pakistan. Of course,l Zaidi is not the only one to do so.

Human Development in South Asia 2006: Poverty in South Asia Challenges and Responses is a report by Mahbub-ul Haq Human Development Center Islamabad which has concluded that *"the historical analysis of the dynamics of poverty, inequality and economic growth in Pakistan reveals that the poor have mostly been excluded from the process of economic growth. Despite achieving a reasonable economic growth rate--- Pakistan's GDP Growth rates since the 1990's have stayed in the range of 4 percent---the country is still lagging far behind in terms of human development".*

Dr Altaf (2004) Chairman Pakistan Agriculture Research Council (PARC) rejects "trickle-down" as a tool of poverty reduction. He while addressing the plight of rural areas especially farmers in Pakistan, writes in his book titled, Poverty: Practical Solutions to Pakistan's Economic Problems, says: *"If the state of affairs is to continue, then what is the use of these tangibles of growth? I had to visit some villages in the Punjab during a water crisis. The people living there had no amenities. I must have visited thousands upon thousands of villages during my travels (not like some ministers and secretaries who travel only to towns only). It is difficult to see how the growth that is being touted measures up to the needs of the poor. The trickle down effect? Forget it."*

This positive relationship between growth and poverty reduction is also rejected by Kakwani (2003) who stresses the fact that most studies supporting the trickle down effect are based on average measures. These average measures he argues are not true representative of individual cases. Poverty to him is a very individual factor. Therefore, he rejects both the trickle down theory and pro-poor growth arguments and favors targeted programs.

Quoting various issues of economic survey Altaf has analyzed poverty trends in Pakistan. He has divided the era from 1963 till 2004 (the year his book was published) into four phases. First phase (1963-71) was marked with a very high level of income inequality and this regional disparity in level of poverty resulted in creation of Bangladesh. Second phase (1971-79) showed widening of this gap though nationalization on part of Bhutto regime resulted in creations of jobs and all. In the third phase (1984-87) there was decline in disparity (which he attributes to the foreign support to Zia regime). And the last phase (1990-2000) has seen increase in poverty level and income disparity. For him, these up and down trends of poverty in our country are directly related to international politics. Klein (2007) in her book *The Shock Doctrine- the Rise of Disaster Capitalism* has explained in detail how multinational corporations along with the dictators around the globe are trying to initiate a form of pure capitalism. She has pointed out international examples to support her theory that this system under dictators lead to worsening of economic situation, unemployment and increase in poverty. The data provided by Sen (1982) also supports this argument, since famines and other food shortages do not take place under democracies. These arguments highlight the relation between politics and poverty. Looking at the political history of Pakistan we see that even if these dictators were financially supported by IMF, WB and other financial institutions, they were unable to alleviate poverty. There were some benefits from foreign aids they received but in long run it led the nation into debt, inflation

and unemployment. Rosy picture painted during these years was based on per capita and GDP pictures which being average measures failed to give a true picture at individual level. As the elites were getting richer and richer during these dictator-zones, per capita incomes and GDP increased (on the basis of which poverty was being measured so poverty showed decline), on the other hand common man struggled for survival which is evident from increase in inequality over these periods.

No matter how many aspects of poverty we have tried to tackle individually they have failed to give desired results. This is because one aspect improves and other being neglected goes from bad to worse cancelling any improvement in any unidimensional stance. We therefore need to build a multidimensional poverty measure targeting multiple dimensions simultaneously. In doing so, we need to focus on the type of poverty prevailing in the economy currently. Arif & Bilquees (2006) have argued that people keep going into and out of poverty. Those who stay there for long period of time and cannot come out, they suffer from chronic poverty (25-33%) of people living less than 1 $ a day in South Asia are chronic poor. Out of these, a major share lives in Pakistan and Bangladesh. These two types of poverty need different techniques to be tackled (bad grammar). Whereas transitory poverty can be removed with social security measures, micro-financing etc. chronic poverty cannot be removed without structural changes.

To handle poverty, government of Pakistan in collaboration with IMF and WB has been following SAP. Where there are multiple studies by IMF, WB and ADB along with independent analysts supporting these programs there are multiple studies showing their dark sides as well. Kelin (2007) and Singh (2005) have written in detail with country specific examples showing the failures of the structural adjustment programs. As far as impacts of these structural adjustment

programs SAP's is concerned for Pakistan Firoze (1988) wrote that these SAP's given by WB and IMF target to achieve restricted role of the governments in the economy, to reduce fiscal deficit, rationalization of tax structure, removal of subsidies on consumption and production, higher level of output and stability of prices etc. however, due to structural weaknesses within and adherence to financial aspect alone of the SAP's have aggravated the structural problems rather than alleviating them by having negative implications for employment, poverty and income distribution. This is because of their one-size-fit-all ill targeted policies. Kemal (2003) has expressed that where SAP's increased production capabilities and efficiency, they reduced the pro-poor expenditure in Pakistan, a country where almost one quarter of population is poor according to the most narrow income definition. Therefore it can safely be said that the purpose of stability by SAP's has been a failure. Privatization, a central pillar of these programs has worsened the already weak institutional structure and employment situation. Income inequality has increased due to three headed monster of decreased employment, increased tax incidence on poor and withdrawal of input subsidies. Targeted social welfare programs are required along with SAP's to get positive results (Kemal 1994, 2003). This surprisingly is a very similar conclusion done by Firoze as early as 1988. That means that over these two decades and more SAP's have not only been failing to achieve their set targets but also are involved in aggravating the financial, social and economic conditions in Pakistan. Question that we need to ask here is that are 23 years not sufficient enough to learn from our mistakes? Same question has been asked and explored by Gera (2007) from Lahore School of Economics. She has mentioned that these SAP's have changed a lot over the time in their specificities however; its ideology has remained the same. She has further proved with national and international examples that these SAP's have been a failure. Need of the hour is to reject the failed policies and replace them with new

effectively designed targeted social security programs. This study focuses on finding the actual problem, its exact extent and probable solution in this regard. Targeted social welfare programs are required along with SAP's to get positive results (Kemal 1994, 2003). This surprisingly is a very similar to the conclusion obtained by Firoze as early as 1988. That means that over these two decades and more SAP's have not only been failing to achieve their set targets but also are involved in aggravating the financial, social and economic conditions in Pakistan. Question that we need to ask here is that are 23 years not sufficient enough to learn from our mistakes? Same question has been asked and explored by Gera (2007) from Lahore School of Economics. She has mentioned that these SAP's have changed a lot over the time in their specificities; however; the underlying ideology has remained the same. She has further proved with national and international examples that these SAP's have been a failure. Need of the hour is to reject the failed policies and replace them with new effectively designed targeted social security programs. This study focuses on finding the actual problem, its exact extent and probable solutions in this regard.

Welfare programs will be successful if and only if they are supported by good governance and strong institutional base. Kemal (2003) says that 'poor get hit hard by poor governance', well functioning institutions help in promotion of growth and poverty reduction. According to Ahmed (2003) Pakistan has shown reduction in poverty as per per-capita definition during 70's and 80's and increase during 90's but looking at countries with same per-capita incomes, Pakistan's performance in social indicators show serious deficiencies showing 'social gap'. This is clear indication that poverty measurement should be focusing on this social gap along with monetary poverty and social security programs should be well researched before

implementation, rather another detailed survey of issues and directions of social security programs need to be evaluated before it can be treated as a good tool of early poverty reduction.

Apart from structural adjustment programs social security programs being implemented, their failure and reasons of failure are described in detail by Irfan (2003) and MUHHDC 2006 report.

Despite application of various poverty alleviation measures, poverty still prevails in Pakistan as one of the major economic issue. Two major reasons for this are lack of human capital and failure of trickle down theory. One major flaw with the planning of all poverty alleviation programs is their dependency due to various limitations on income based measures (mostly WB 1 $ and 2 $ a day definitions). If all the above mentioned programs and initiatives have been unable to measure poverty correctly in true sense and alleviate it altogether, they can safely be considered as failure. Our next step in this thesis will be the analysis to see why this happened?

3- MULTIDIMENSIONAL POVERTY: TIME-SERIES TRENDS IN PAKISTAN OVER THE PAST DECADE

The aim of this research is to draw attention to ignored dimensions of poverty in Pakistan that are of value to poor people, but for which we have scant or no data. Sen frames development as the process of expanding the freedoms that people value and have reason to value. Although the most widely-known measures of human development by Mahbob-ul-Haq include income, longevity, and education, many have argued that things people value, and consequently multidimensional poverty, extend beyond these domains. In order to advance these multiple areas, it is at times necessary to conduct empirical studies using individual or household-level data on multiple dimensions of poverty. Over time need has been felt for a most elaborated multi-dimensional poverty measure which covers all aspects of poverty. This study is an effort to get the importance of multidimensional poverty analysis registered with the policy makers in Pakistan. For this purpose, each dimension should be studied both at individual and composite level to understand its role in poverty.

3.1 DIFFERENT DIMENSIONS OF POVERTY:

"....a healthy, well-fed. Literate population ....is the most intelligent economic choice a country can make"

George (1990)

The ideology that income provision to people will automatically provide these people with other dimensions of well being was proved wrong by Xavier (2005). He has shown that there exists weak correlation between constituent dimensions and over all wellbeing with

equivalent different dimensions of poverty have been studied over time. Poverty has many dimensions out of which health, education, housing, social exclusion and gender empowerment are few central ones. If there are deprivations in these dimensions poverty level increases. Case of Pakistan is no different. If we look at the studies on poverty each research has mentioned certain dimensions of poverty.

Qureshi & Arif (2001) for poverty measurement have included food, clothing, housing, health, education; transportation and recreation in line with the basic needs approach. Almost same variables were used by Zaidi & Devos (1994) and Malik (1996).

Jamal (2005) focused on dimensions like demography, education, occupation of head, assets and housing quality. Haq (2005) has focused on education, employment demography, housing, source of drinking water and type of toilet facility. Other studies could be mentioned as well but more or less variables used for the studies in Pakistan will remain the same as the data collection sources like Pakistan Demographic and Health survey and Household Integrated economic survey have very limited of these dimensions included in their survey and secondly even if some of these dimensions are included data is not consistently available for them. For example data for a very basic health indicator like height and weight or body mass index for individuals is missing from PDHS 2006 data set used for this research. Same is true for various years HIES data used in the current study.

Health and education are two most major dimensions of poverty which lead to the deprivations in other dimensions of poverty as well (Shah 2007, Colgan 2002) and their presence is central to a meaningful life. They are also part of the social and economic rights that should be guaranteed to all people. In addition, few things yield higher returns for poverty reduction than

investments in and equitable access to education and health. Education has repeatedly been identi fied as a highly significant factor in reducing poverty. Health and poverty are closely linked, and feed on each other. Illness causes poverty while poverty makes people susceptible to disease and disability.

Furthermore, the single most important asset for the majority of poor households and individuals is their labor.

3.2 MULTIDIMENSIONAL POVERTY MEASURE:

3.2.1 INTRODUCTION:

My research has used Alkire-Foster measure (2007) for multidimensional poverty measurement. This measure consists of two steps (i) identification method which uses traditional intersection and union approaches and is two stepped itself (a) identification of cut-off at dimension level which decides if a person is deprived in that particular dimension and (b) a second overall cut-off which decides the number of dimensions one has to be deprived off to be considered as poor (ii) an adjusted head count ratio M_0 that signifies a range of desirable properties. Aggregation is done in this measure by an extension of FGT measure adjusted for multidimensionality.[21] Beauty of this measure is that it answers almost all questions that come to mind while attaining a multidimensional measure like which dimensions to choose? Where to set their cut-offs? How to aggregate? What should be overall cut-off? How each dimension should be weighted? It can be easily applied on ordinal data as well. The only question not answered by this measure is the inter-dimensional relationships.

[21] Detail of this can be seen in Alkire-Foster Guide (2007)

Let n represent the number of persons and $d = 6$ be the number of dimensions under consideration. Let $y = [yij]$ denote the $n * d$ matrix of achievements, where the typical entry $yij > 0$ is the achievement of individual $i = 1,2,\ldots, n$ in dimension $j = 1,2,\ldots, d$. Each row vector yi lists individual i's achievements, while each column vector yj gives the distribution of dimension j achievements across the set of individuals. In what follows we assume that d is fixed and given, while n is the sample size of the survey being used (HIES 1998-2006). Let $zj > 0$ denote the cutoff below which a person is considered to be deprived in dimension j, and let z be the row vector of dimension specific cutoffs.

A methodology M for measuring multidimensional poverty consists of identification method and aggregation method. Former is represented in such a way that $\rho\ (yi; z) = 1$ if person i is poor and $\rho\ (yi; z) = 0$ if person i is not poor. Applying ρ to each individual achievement vector in y yields the set $Z \subseteq \{1,\ldots, n\}$ of persons who are poor in y given z. The aggregation step then takes ρ as given and associates with the matrix y and the cutoff vector z an overall level $M(y; z)$ of multidimensional poverty. The resulting functional relationship M is called an *index*, or *measure*, of multidimensional poverty. This research uses the Alkire Foster methodology $M = (\rho, M)$ for measuring multidimensional poverty.

For any given y, let $g0 = [\ gij\ 0\ ]$ denote the 0-1 *matrix of deprivations* associated with y, whose typical element $gij\ 0$ is defined by $gij\ 0 = 1$ when $yij < zj$, while $gij\ 0 = 0$ otherwise. Clearly, $g0$ is an $n * d$ matrix whose ijth entry is 1 when person i is deprived in the *jth* dimension, and 0 when the person is not. The ith row vector of $g0$, denoted $gi0$, is person i's *deprivation vector*. From the matrix $g0$ we can construct a column vector c of *deprivation counts*, whose ith entry $ci = |\ gi0|$ represents the number of deprivations suffered by person i.

3.2.2 IDENTIFICATION:

Who is poor and who is not? A reasonable starting place is to compare each individual's achievements against the respective dimension-specific cutoffs. But dimension specific cutoffs alone do not suffice to identify who is poor; we must consider additional criteria that look *across* dimensions to arrive at a complete specification of identification method. We now examine some potential candidates for $\rho(yi; z)$. The 'unidimensional' method aggregates all achievements into a single cardinal variable of 'well-being' or 'income' and uses an aggregate cutoff to determine who is poor. So, for example, if yi is a vector of commodities with market price vector p, one might define $p(yi; z) = 1$ whenever $pyi < pz$, and $p(yi; z) = 0$ otherwise. In this case, a person is poor if the monetary value of the achievement bundle is below the cost of the target bundle z. More generally, one might invoke an aggregator function u such that $u(yi; z) = 1$ whenever $u(yi) < u(z)$, and $\_u(yi; z) = 0$ otherwise. The most commonly used identification criterion is called the *union* method of identification. In this approach, a person i is said to be multidimensional poor if there is at least one dimension in which the person is deprived (i.e., $\rho(yi; z) = 1$ if and only if $ci > 1$). The other intense identification method is the *intersection* approach, which identifies person i as being poor only if the person is deprived in all dimensions (i.e., $\_(yi; z) = 1$ if and only if $ci = d$). This criterion would accurately identify the poorest of the poor but excludes poor people not deprived in any one dimension. Secondly, as the dimensions grow the proportion of the population appearing as poor declines to such a small slice that it disregards the rest. A natural alternative is to use an intermediate cutoff level for ci that lies somewhere between the two extremes of 1 and d. For $k = 1,\ldots, n$, let k be the identification method defined by $k(yi; z) = 1$ whenever $ci \geq k$, and $k(yi; z) = 0$ whenever $ci < k$. In other words, k identifies person i as poor when the number of dimensions in which i is deprived is at least k; otherwise, if the number of

deprived dimensions falls below the cutoff k, then i is not poor according to k. Since k is dependent on both the *within dimension* cutoffs zj and the *across dimension* cutoff k, Alkire & Foster have referred to k as the *dual cutoff* method of identification. Here k includes the union and intersection methods as special cases where $k = 1$ and $k = d$.

3.2.3 DATA LIMITATIONS:

Model has been calculated for HIES 1998-2006 data set. As no panel data is available in Pakistan for the required social indicators therefore for watching time series trends and to check the reliability of the measure various years of HIES /PSLM data sets are used. First time the model was calculated with PDHS data set for year 2006-07 (latest one available). However, due to non availability of other data sets in PDHS, and secondly to check the effectiveness of the measure on other data sets available HIES data sets from 1998-2006 (various years) were used to check time series trends. Second and the most important reason was frequent use of this source of data for poverty measurement in national and international studies. Thirdly the data regarding the dimensions was available in this source. On the other hand the limitations with the data included non-availability of panel data, missing variables in few years and limited number of years for which the survey was conducted during the past decade. Data set for year 2007-08 whose report has been made available by Federal Bureau of Statistics Government of Pakistan has not been released yet because of some technical issues.

Table 3.1: Dimensions and indicators for multidimensional poverty

Dimensions	**Indicators**	**Data set using these variables**
Living standard	Housing type, electricity	HIES 1998-99, HIES 2001-2002, PSLM 2004-05, PSLM 2005-06, PDHS 2006-07
Water and Sanitation	Source of drinking water, type of toilet facility	HIES 1998-99, HIES 2001-2002, PSLM 2004-05, PSLM 2005-06, PDHS 2006-07
Air Quality	Type of cooking fuel	HIES 2001-2002, PSLM 2004-05, PSLM 2005-06, PDHS 2006-07
Assets	Refrigerator, TV, AC/room cooler, Car, Washing machine	PSLM 2004-05, PSLM 2005-06, PDHS 2006-07
Education	Maximum education by any household member	HIES 1998-99, HIES 2001-2002, PSLM 2004-05, PSLM 2005-06, PDHS 2006-07
Livelihood	Occupation of respondent, occupation of partner	HIES 1998-99, HIES 2001-2002, PSLM 2004-05, PSLM 2005-06, PDHS 2006-07
Health	Immunization	HIES 1998-99, HIES 2001-2002, PSLM 2004-05, PSLM 2005-06
Women empowerment	Decision authority about education, employment, marriage, medical treatment, birth control, number of children, travel and entertainment, food, clothing & footwear etc.	HIES 1998-99, HIES 2001-2002, PSLM 2004-05, PSLM 2005-06

3.2.4. METHODOLOGY:

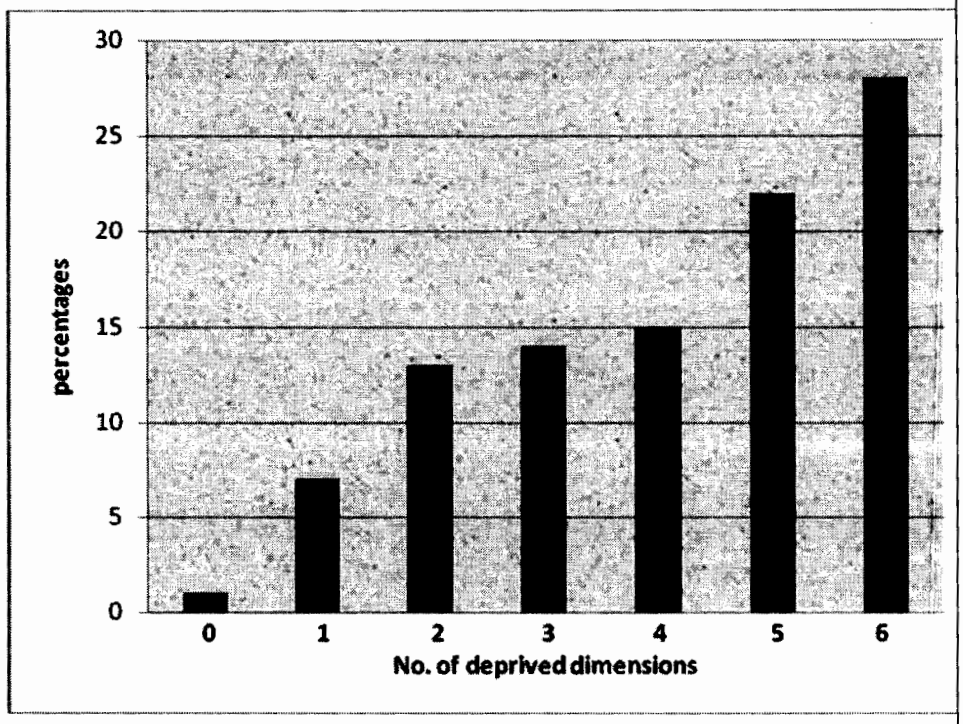
For constructing a multidimensional poverty measure $M(y; z)$ to be used with the dual cutoff identification approach, we begin with the percentage of the population that is poor. The headcount ratio $H = H(y; z)$ is defined by $H = q/n$, where $q = q(y; z)$ is number of persons in the set Zk, and hence the number of the poor identified using the dual cutoff approach. If, however, a poor person becomes deprived in a dimension in which that person had previously not been deprived, H remains unchanged. This violates what we will call 'dimensional monotonicity'. If poor person i becomes newly deprived in an additional dimension, then overall poverty should increase. To reflect this concern, information about the breadth of deprivation experienced by the poor is included. Let k be an integer between 1 and d. The *censored vector of deprivation counts* $c(k)$ is defined as follows: If $ci > k$, then $ci(k) = ci$, or person i's deprivation count; if $ci < k$, then $ci(k) = 0$. Notice that $ci(k)/d$ represents the share of possible deprivations experienced by a poor person i, and hence the *average deprivation share* across the poor is given by $A = |c(k)|/(qd)$, which is the fraction of possible dimensions d in which the average poor person suffers deprivation.

We are going to use the ***adjusted headcount ratio M0(y;z)=HA***, defined by Alkire and Foster 2007, which combines information on the prevalence of poverty and the average extent of a poor person's deprivation. The adjusted headcount ratio is the total number of deprivations experienced by the poor, divided by the maximum number of deprivations that could possibly be experienced by all people, or nd. It is a simple product of the two partial indices H and A. It is sensitive to the frequency and the breadth of multidimensional poverty.

3.2.5 RESULTS:

In this research we are interested to find multidimensional poverty for Pakistan. A household may be deprived in only one dimension whereas another may be deprived in three or four out of concerned dimensions. But both these households are deprived in at least one dimension. So can we consider them equally poor? That is not so. There is a major difference between the breath of poverty for both, where later leads the former. Thus, we want to explore the breath of poverty for Pakistani population. Therefore, we want to know how much of the population is deprived in one dimension, in two dimensions so on and so forth till we find out the % age of population deprived in all dimensions under consideration. In the first column of Table 3.2, exact number of dimensions in which any particular household is deprived is reported. For example, 12.9 per cent of the sample are deprived in exactly two dimensions (it does not matter which one) and not deprived in the other dimensions. The second column reports the percentage of people deprived in exactly that many dimensions. In the third column, a pie chart is provided to diagrammatically show the distribution of the breadth of multi-dimensional poverty in Pakistan.

Table 3.2: Indicators and Cut-offs of Dimensional Poverty Rates

Dimensions	%age poverty rate	Fig 3.1: Distribution of dimensional poverty rates
0	0.7	
1	6.8	
2	12.9	
3	13.9	
4	15.2	
5	21.9	
6	28.5	
Total	100	

Only 0.7 % of Pakistani population is not deprived in any of the six dimensions.[22] We can see that if union definition (deprived in at least one dimension) is considered 99.3% of Pakistan is poor according to this multidimensional poverty measure. Whereas, if intersection definition (deprived in all dimensions) is taken into consideration even then as high as 28.5% population suffers poverty. Point to be noted here is that as the more and more dimensions were considered poverty in Pakistani population kept on increasing. This leaves us with anticipation that if further

[22] For the detail of the selection criteria of each dimension see ANNEX 1.

dimensions were included like health, empowerment and child status etc. probably the analysis would have shown a bleaker picture. Nearly 47% of the population is poor in four dimensions.

In Table 3.3, the number of poor in multiple dimensions; the cut-off based headcount ratios and the adjusted headcount ratios are shown. The union approach would identify 92.5 per cent of rural population as poor. On the other hand, the intersection approach leads to 28.5% poverty. If the poverty cut-off is two that means people are deprived in two or more than two out of six dimensions. 65.6 per cent of population belongs to poor households and it denotes the multidimensional headcount ratio for this k=4 cut-off. To avoid criticisms of the multidimensional headcount ratio (it does not take into account the breadth of multidimensional poverty, does not satisfy dimensional monotonicity, and is not decomposable) the adjusted headcount ratio ($M0$) as a measure of poverty has been used instead of a multidimensional headcount. For theoretical properties of M_0, see Alkire-Seth (2008).

We use the cut-off of two out of six subsequently, because leaving aside union definition k=2 is the cut-off showing the broadest picture of deprivation. The third column of Table 3.3 reports the adjusted headcount poverty rates for different cut-offs. If the poverty cut-off is four out of six dimensions, then M_0 is 0.568. As $M0 = HA$. For the poverty cut-off of four out of six dimensions, H is equal to 0.656 and A is equal to 0.568/.656 = 0.866. A can be interpreted as the poor being deprived in 86.6 per cent of all dimensions on average. Thus, the fourth column reports the average depth of poverty among the population from the poor households. This shows that if k=6 is considered then 28.5% of population is poor with 100 % average deprivation in all dimensions.

Table 3.3: Pakistan: Multidimensional Poverty Measures

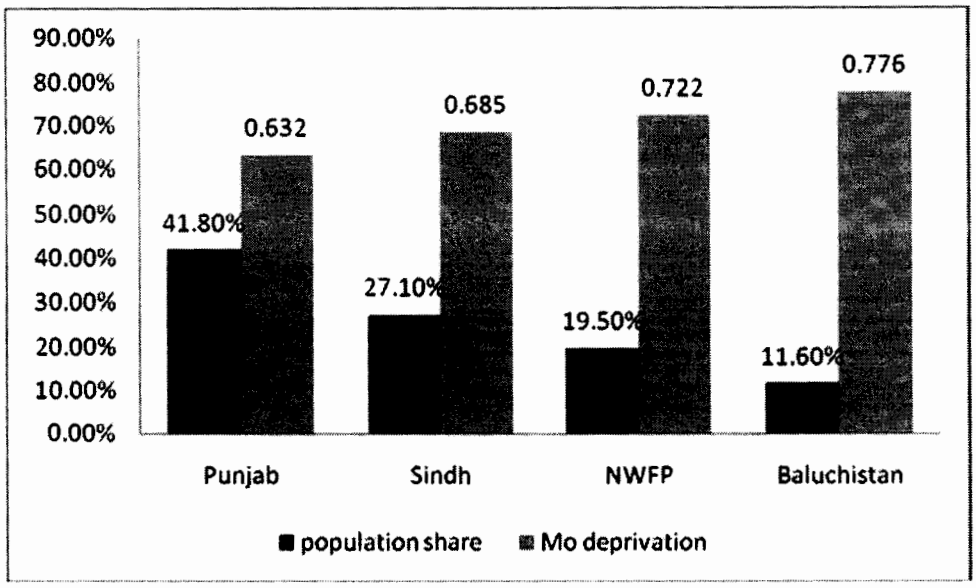
Poverty cut-offs (k)	Headcount Ratio (H)	Adjusted Head count Ratio M_0=HA	Average deprivation share A= M_0/H
2	.925	.682	.737
3	.795	.638	.802
4	.656	.568	.866
5	.509	.471	.925
6	.285	.285	1

These results depict that considering ground realities and individual level dimensions actually representing poverty in terms of daily life gains and losses for people instead of some country level indicator like per capita GNP, inflation or GDP etc. if two or more than two dimensions are considered (union definition with respect to k=2) then 92.5% of Pakistan's population is poor. However, considering k=6 only people those are deprived in all six dimensions available 28.5% of Pakistani population is extremely poor with poor living standard (either with a kaccha house or no electricity, with equal weightage), poor water and sanitation (no access to safe drinking water and no proper toilet facilities), poor air quality (unsuitable cooking fuels), with limited or no asset holdings(fridge, tv, car, AC, washing machine), very little or no education (less than primary) and with no proper means of livelihood. This is not a very bright picture compared to results of same measure calculated by Alkire & Seth (2008) for India. Even though more dimensions were considered for India, she is almost free of extreme poverty using same definition.

Table 3.4: Province-wise Decomposition of Poverty for Unequal Weighting and 2/6 Cut-off

Regions(provinces)	Population share(%age)	H=q/n	H rank	Mo	Mo Rank
Punjab	41.8%	.901	1	.632	1
Sindh	27.1%	.92	2	.685	2
NWFP	19.5%	.95	3	.722	3
Baluchistan	11.6%	.97	4	.776	4

Fig 3.2: Province-Wise Population and Deprivation Shares:



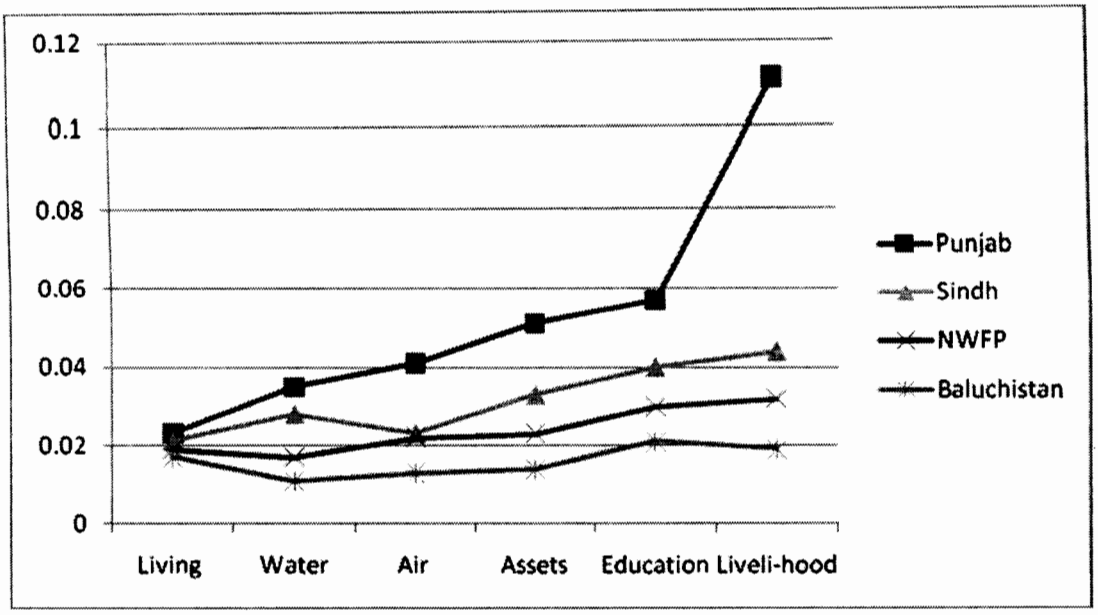
Up till now this research has focused poverty at country level. Now province-level analysis will be done. In our PDHS sample, Pakistan has 4 regions or provinces. Table 3.4 ranks states according to their adjusted headcount poverty ranks, where a household is identified as poor if it is deprived in two out of six dimensions. Punjab ranks first and Sindh registers the second lowest poverty rate according to the $M0$ measure. Baluchistan ranks last, where more than 77 per cent of the population is identified as members of poor households. The overall $M0$ ranks for provinces are same as that of headcount ranks however; poverty %age shows 20-30% decline in $M0$ as compared to multidimensional head count ratio.

Now it would be interesting to analyze the source and contribution of different dimensions in the overall poverty. In Table 3.5, we present the decomposition of poverty across different dimensions. It is evident from the table that all four provinces show that education and livelihood are two dimensions demanding close attention of policy makers. Punjab and Sindh not even have close Mo values but also have similar trends in sources. For example both have done well in terms of living standard, water and sanitation and air quality, but contribution of assets, education and livelihood in terms of poverty is high. Similarly both NWFP and Baluchistan have close Mo value. However, in Baluchistan living standard did not show a very good picture (18.3%) as compared to 8.3 and 11.7% of Punjab and Sindh respectively. These two provinces may have performed better than other two but show bleak picture with respect to water and sanitation as compared to NWFP and Baluchistan. This type of decomposition enables the policy makers to make proper policy recommendations. Punjab is the best in terms of living standard (8.3%) but worst of the four in terms of livelihood (25.1%). This type of analysis helps policy makers to focus on exact issues to be resolved and precise sources of poverty can be combated with more targeted planning.

Table 3.5: Poverty Decomposition by Dimensions

Mo rank	Provinces	Living Standard	Water & San.	Air Quality	Assets	Education	Liveli-hood	Mo
1	Punjab	0.023	0.035	0.041	0.051	0.057	0.111	0.63
-	*Breakdown%*	*8.6*	*13.4*	*14.7*	*16.9*	*21.3*	*25.1*	*100*
2	Sindh	0.021	0.028	0.023	0.033	0.04	0.044	0.69
-	*Breakdown%*	*11.7*	*14.8*	*12.0*	*17.3*	*21.1*	*23.3*	*100*
3	NWFP	0.019	0.017	0.022	0.023	0.030	0.032	0.72
-	*Breakdown%*	*13.5*	*11.7*	*15.6*	*16.3*	*20.5*	*22.3*	*100*
4	Baluchistan	0.017	0.011	0.013	0.014	0.021	0.019	0.77
-	*Breakdown%*	*18.3*	*12.0*	*14.2*	*14.9*	*19.5*	*21.1*	*100*

Fig 3.3: Province-wise dimensional deprivations breakdown



Finally we need to check the robustness of the poverty ranking Mo for varying cut-offs. We concluded in initial discussion of the thesis that poverty cut-off is arbitrary and therefore want to see if the $M0$ rankings change drastically due to a change in the cut-off. As a solution to this problem we calculate the $M0$ measures for different cut-offs and then we calculate the Spearman's rank correlation coefficients between each pair of rankings for $k = 2,\ldots,6$. From Table 3.7, it can be seen that the minimum correlation is 0.97 between $k = 2$ and $k = 6$. Therefore, we can conclude that the rankings for varying poverty cut-offs are highly robust.

Table 3.6: Spearman's Rank Correlation Matrix for Different M_0 Rankings

Cut-off (k)	2	3	4	5	6
2	1.00	-	-	-	-
3	0.99	1.00	-	-	-
4	0.98	0.99	1.00	-	-
5	0.98	0.99	0.99	0.99	-
6	0.97	0.98	0.98	0.98	0.98

The best thing about this measure is that it does not bind an analyst to the needs of the politicians. Rather it gives the true picture of deprivations in the society. Due to its elaborate nature and decomposability every aspect is in front of the analyst. Secondly the choice to use any cross dimensional cut off from union to intersection approaches and with in allows to focus in policy making on the extent of poverty treatable depending upon the availability of resources. This measure also gives the dual freedom to the analysts. Not only can the dimensions focused policies could be created to counter poverty but it can also be calculated for the policy specific dimensions.

HIES 1998-99 to 2005-06:

PDHS analysis gave a very clear picture of the situation during 2006-07. However, as since 1995 till today only two data sets were available in PDHS data. To check the time series trends in this dimensions and %age of poverty relation four years data sets available in HIES data since 1995 till 2010 were used. This shift of data sets not only helped us see the trends in poverty growth and its different dimensions but also was a proof that multidimensional poverty

poverty in 1998-99 which increased to 8.8% in 2005-06. Where only during 2004-05 poverty by this definition showed poverty free Pakistan but if only like other years six dimensions were taken into consideration then 8.6% population is poor. If neither union nor intersection definitions were used rather a moderate cutoff point k=4 or 5 were used then we can see that nearly 49.7% to 76.1% population is seen as deprived in Pakistan from 1998-2006. This shows a very contrasting picture of poverty and deprivation to headcount, per capita income and income gap ratios used by the Government of the said time period.

Table 3.8: Deprivation index M_0 for different cut-offs K (Various HIES data sets)

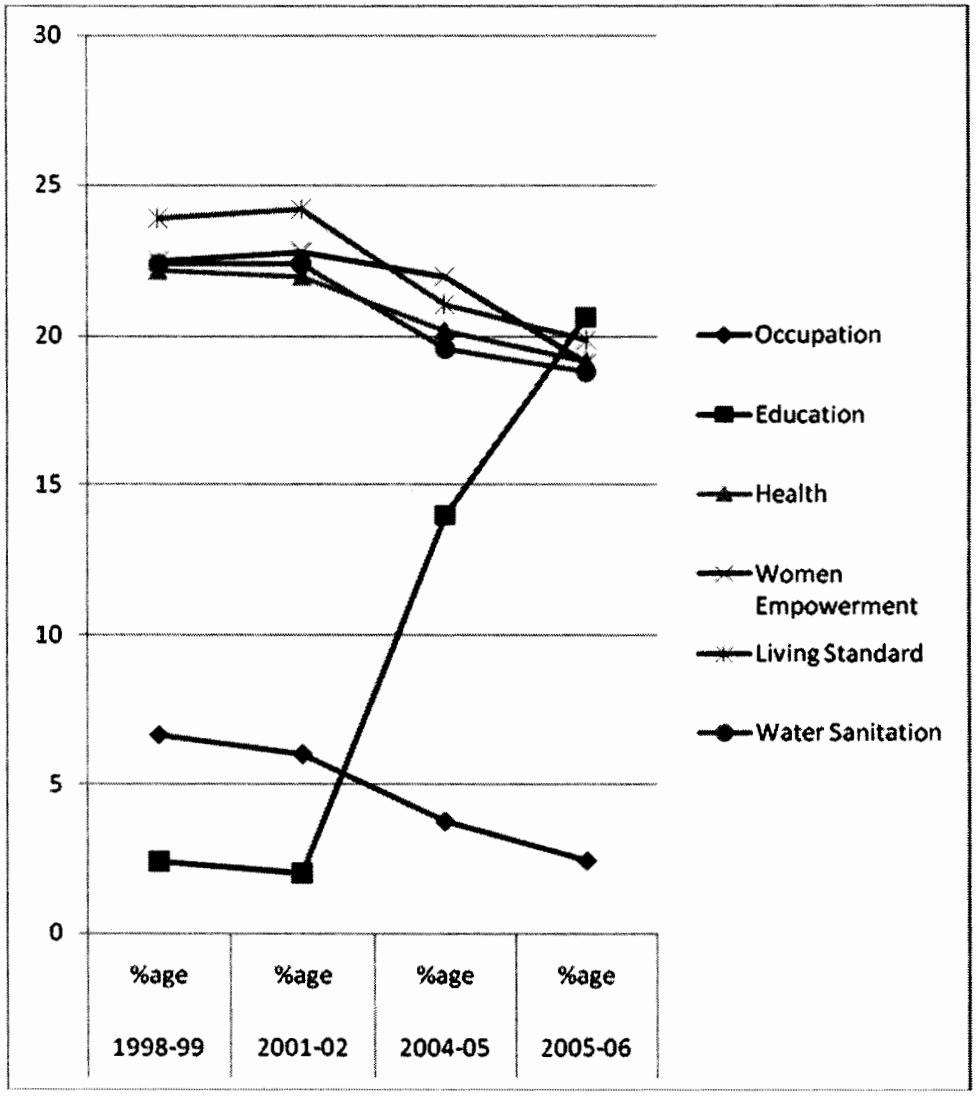
K	M_0			
	1998-99	2001-02	2004-05	2005-06
1	0.655	0.656	0.647	0.807
2	0.648	0.652	0.647	0.806
3	0.625	0.632	0.639	0.800
4	0.586	0.595	0.614	0.778
5	0.255	0.196	0.431	0.722
6	0.017	0.018	0.074	0.088
7	-	-	0.0002	-

This time series trend supports the %age poverty analysis for the years and shows two very obvious conclusions. First is the fact that multidimensional poverty measure does hit the specific deprivation areas and secondly shows that in the past decade there has been a sharp incline in deprivation of the basic dimensions selected and overall poverty as well. This also shows that in during last decade incline became sharper in the last quarter. For any cut-off one can select from union to intersection definitions and intermediate as well, these conclusions stand ground.

Table 3.9: Time series trends in Dimension-wise poverty breakdown (%age) HIES Data

Dimensions/ Years	1998-99		2001-02		2004-05		2005-06	
	M_0	%age	M_0	%age	M_0	%age	M_0	%age
Occupation	0.043	6.64	0.038	6.0	0.024	3.75	0.019	2.43
Education	0.016	2.4	0.016	2.0	0.091	13.99	0.166	**20.64**
Health	0.145	**22.2**	0.144	**22.0**	0.131	**20.18**	0.154	**19.16**
Women Empowerment	0.147	**22.5**	0.149	**22.8**	-	-	0.154	**19.09**
Living Standard	0.156	**23.9**	0.158	**24.2**	0.137	**21.05**	0.159	**19.86**
Water Sanitation	0.146	**22.4**	0.147	**22.4**	0.127	**19.58**	0.015	**18.80**
Assets	-	-	-	-	0.121	**18.59**	-	-
Air Quality	-	-	-	-	0.017	2.59	-	-

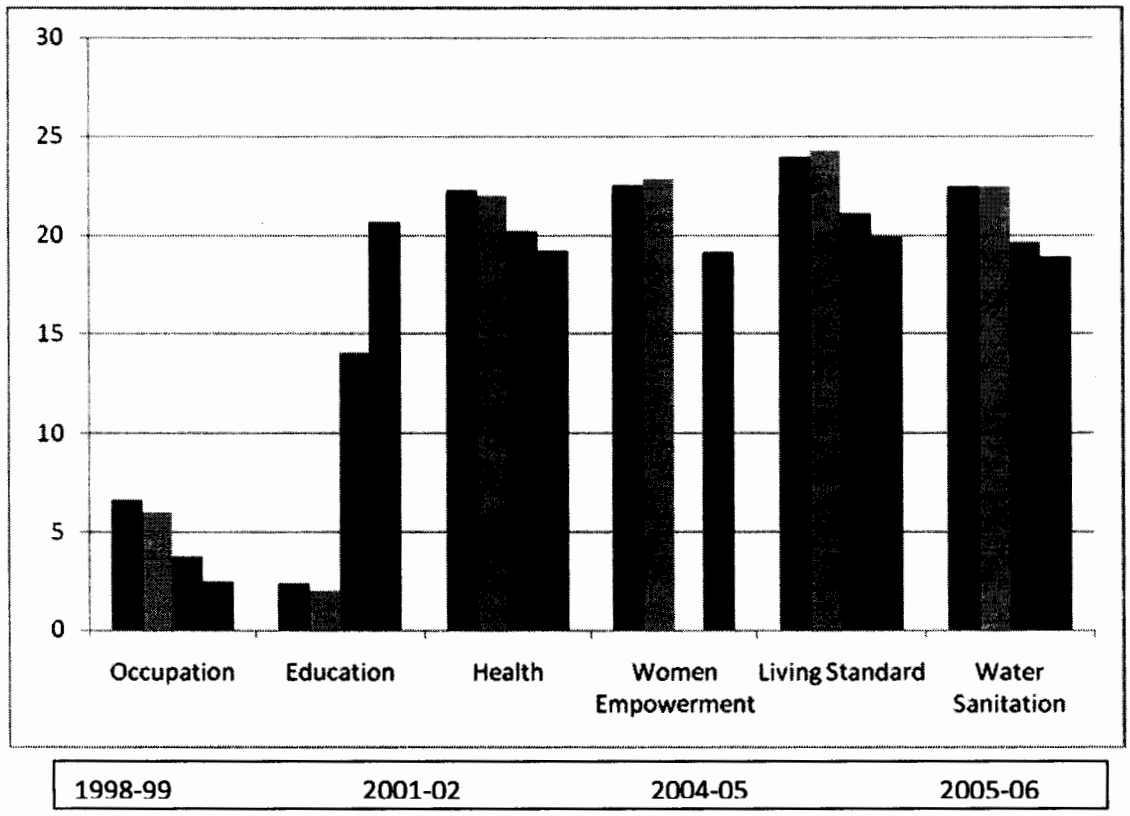
Fig 3.4: Time series trends in Dimension-wise poverty breakdown (%age) HIES Data



Dimension-wise poverty breakdown shows that during 1998-99 and onwards health, women-empowerment, living standard and water & sanitation were the four major contributors of poverty. These four dimensions showed stability in their behavior over the years with negligible declining trend till 2005-06. Occupation is the only dimension showing any real reduction from 6.64% in 1998-99 to 2.4% in 2005-06. However, this being a very small

constituent of the multidimensional poverty couldn't cancel out the major negative impacts of the all other dimensions. For that matter education alone was sufficient for the cancelation of the positive improvement shown by occupation as it increased the poverty share from 2.4% in 1998-99 to 20.64% in 2005-06. If we look at the overall changes we can easily conclude that poverty has risen during these years.

Fig 3.5: Year wise dimensional breakdowns:



These results are very helpful to understand that if instead of 'political poverty' the focus is turned towards alleviating the 'real poverty' then all the social security measures and other poverty reduction programs should focus on reducing deprivation in the said dimensions (and

others that could be added to the analysis with data availability), giving priority to the dimensions showing constant and major deprivations over the years.

4. CONCLUSIONS & RECOMMENDATIONS

The findings of the study allow for the research to conclude with the assertion that multidimensional poverty measure withstands implementation in Pakistan. It has also been proved to be a more elaborate, deep and realistic poverty paradigm as compared to its unidimensional counterparts. This finding, in itself, is extremely interesting because it is based upon a series of data analysis over years for Pakistan and is supported by other critical research findings. These findings are (1) there is a huge difference between the governments calculated unidimensional poverty and that of deprivation picture painted by the multidimensional poverty measure calculated by the current study. (2) Multidimensional poverty gives a better picture of poverty situation as it uses both aggregation and identification steps. (3) this measure gives flexibility of variation both in aggregation 'dimensions of poverty to be included' and identification 'dual-cut-offs'. (4) Multidimensional adjusted headcount ratio can also work with ordinal data and satisfies dimensional monotonicity. (5) This measure also satisfies 'decomposability' which requires overall poverty to be weighted average of sub-groups. These findings, in brief, highlight the effectiveness of use of multidimensional poverty measure.

Needless to say, the study does not purport to cover all areas of comparative study with study unidimensional measures, nor does it offer an extensive analysis of yearly data available for Pakistan. However, that did not detract from the value of this research, in fact it has added to the value of the study in the sense that it has enabled the researcher to devote greater time, effort and space to the exploration and investigation of the applicability of multidimensional poverty measure to PDHS and HIES data sets of specific years. In other words, by limiting the scope of

the study, the researcher was able to more thoroughly focus on the proposed research questions and satisfactorily respond to them, as indicated in the table below.

Table 4.1: Research Questions & Answers

Research Question	**Response**	**Approach**
In what ways multidimensional poverty picture differs from the one presented by unidimensional poverty?	The literature review established that there was absolute need of multidimensional poverty measure and that there were no insurmountable structural barriers to the implementation of multidimensional poverty measure in Pakistan. Pakistan specific studies reviewed showed that already researchers were at the verge of suggesting multidimensional poverty measurement and change in policy making is inevitable. Therefore, the findings of the research were that *multidimensional poverty measure can be successfully applied in Pakistan instead of unidimensional poverty measures.*	Qualitative
Can multidimensional poverty measure be a better substitute of conventional unidimensional poverty	The data analysis showed that implementation of multidimensional poverty measure in Pakistan had number of success factors and variables. 1. Thorough study of economy specific	Quantitative

measures?	dimension is necessary in designing it so as it makes it realistic measure. 2. It application is very easy and comfortable. 3. It is flexible both in dimensions and dual-cutoffs making it a generalizable model. 4. It gives province wise picture of each dimension so that poverty alleviation policy making on its basis can combat poverty targeting priority areas.	

In the following sections, with which the research concludes, the study's contribution to the field and its limitations and suggestions for future research directions shall be explicated.

4.1 CONTRIBUTIONS OF RESEARCH:

Chapters two and three of the study were devoted to detailed review of seminal and contemporary academic literature on unidimensional and multidimensional poverty measures, with specific attention on designing poverty alleviation and social security measures. Apart from framing the research's focus, providing readers with an overview of, and background of need of multidimensional poverty measure, the literature review chapters functioned to direct the

research towards an in-depth exploration of comparatively unexplored issues with regard to multidimensional poverty and its measurement in Pakistan, each of which shall now be highlighted.

As highlighted by Pakistan specific literature review that many researchers like Kemal (various issues), Firoze (various issues), Malik (various issues) and Gera (2007) have indirectly stressed redefining poverty on multidimensional basis, however, none so far has actually done it directly either theoretically or analytically. This research has performed both these tasks, which is the first contribution. Current research has shown that poverty in Pakistan and its alleviation measures have failed because of the ignorance of many dimensions of poverty. It has also shown practical implications using data available for past decade.

The second contribution draws directly from the first, where decomposition of poverty can be studied dimension and province wise, showing for the first time in Pakistan, which areas or dimensions need more attention in which provinces. As, however, much of the research's implications are an outcome of these findings, it shall be dealt with in the following sections.

4.2 IMLPICATIONS OF RESEARCH:

The acceptance of multidimensional poverty measure as a tool of defining and measuring poverty in Pakistan will lead to changes in various areas. Firstly, the data availability and question composition of data gathering questionnaires of the government will have to be more deprivation specific instead of income and expenditure specific. This is a plus point as people usually respond more easily, honestly and quickly to deprivations than to inquiries about their

incomes and expenditures. Secondly the data about the expenditures is an estimate due to lack of receipts after purchase.

Other fact is that poverty alleviation measures like conditional cash transfers (Benazir Income Support Program) or other social security measures etc. should be designed and accounted for by looking at the requirements assessed on the basis of dimension specific deprivations measured by this measure.

4.3 DIRECTION FOR FUTURE RESEARCH:

From within the parameters of the larger topic of poverty measurement and alleviation by which public sector or government may adopt, these research opportunities emerge.

The first research opportunity pertains to the design of a multidimensional poverty measure which explains the relative weights of the dimensions and their interdependence. For example if education and health are considered then which is to be given priority and how do they impact each other in long run.

Second research opportunity is the further decomposition of poverty dimensions to district or city levels. This however, is data dependent and can be done only if data is made available for these dimensions at such levels.

Third research opportunity lies in finding the time series trends using panel data for Pakistan since its birth till today. PIDE is doing the third round of its panel data which can be used for measuring time-series trends of multidimensional poverty in Pakistan. After doing so claims of poverty increase and decrease over time can be compared to deprivations faced by people over same time periods.

The three proposed research opportunities, by no means, are exhaustive. However, within the context of this study, they have been pointed out as the most significant of the available ones. In fact, research into the proposed areas would build upon the present study.

4.4 LIMITATIONS OF STUDY:

Given as the importance of the study was emphasized in the introductory chapter, it is very necessary to conclude with a concession to the study's limitations. Such a concession, will apart from framing study in the sense that it outlines the basis upon which it should be judged upon, support the previously stated recommendations for future research.

It is very possible that the present study be judged on the basis of that which it has not covered. Accordingly, one need acknowledge that the study has not suggested a self-created multidimensional poverty measure, nor it has actually applied all four variants of multidimensional poverty measure suggested by Alkire-Foster (2007). This study has not done so due to data limitations. It has also not suggested an exact social security measure for poverty alleviation as this is exactly the theme of the research which states that every area has its own dimensions and its depth of poverty, therefore one-size-fits-all social security measure will not do. The researcher could not, given available time; resources and space have covered these issues. Accordingly they have been proposed for future research.

4.5 FINAL CONCLUSION:

Despite the referenced limitations, the fact remains that the study satisfied the outlined objectives and validated its hypothesis. The position adopted by the study was that there are "no valid obstacles in the face of government's adoption of multidimensional poverty measure as

compared to unidimensional measures". The literature supported this statement and also highlighted its absolute need. Data analysis especially related to it and showed successful implementation on two different data sets measuring time-series trends as well. What became obvious through literature and analysis were that there is a big gap between actual deprivations being faced by Pakistani population and poverty definition, measurement and alleviation measures being designed by the government.

5. BIBLIOGRAPHY:

_____ (2004), 'Economic growth and poverty reduction in Bangladesh' Agricultural Development Bank http:// www.adb.org/documents/studies

_____'Development and the International Development Strategy for the 1990s' London: Macmillan.

Adato, M. Carter, M.R. and May, J. (2006) 'Exploring poverty traps and social exclusion in South Africa, using qualitative and quantitative data' Journal of Development Studies 42(2) February, 2006 p. 226-247

Ahmed, M. (1993) "Choice of a Norm of Poverty Threshold and Extent of Poverty in Pakistan" Ministry of Finance, Islamabad (Mimeographed)

Ahmed, M. (1995) "Poverty in Pakistan: Concept, Measurement, Nature, incidence & Review of strategies to alleviate poverty" Pakistan Institute of Development Economics (Mimeographed)

Ahmed, S (2003) 'Budgetary reforms for growth & poverty reduction in Pakistan' The Pakistan Development Review vol. 42 no. 4 pg 349

Ali, M.S. (1995) 'Poverty assessment: Pakistan Case' The Pakistan Development Review 34:1 43-54

Ali, M.S. (1997) "Poverty Alleviation: The existing situation" In Mohibul Haq Sahibzada (ed.) Poverty alleviation in Pakistan. Islamabad: Institute of Policy Studies. 93-114.

Alkire, S. & Seth, S. (2007), 'Measuring multidimensional poverty in India- a new proposal' OPHI working paper 15. Oxford University: Oxford Poverty & Human Development Initiative.

Alkire, S. (2002), "Dimensions of human development", *World Development*, Vol. 30 No.2, pp.181-205

Alkire, S. and Foster, J. 2007, 'Counting and Multidimensional Poverty Measures', OPHI Working Paper 7 Oxford University: Oxford Poverty & Human Development Initiative.

Alkire, Sabina. and Santos, Maria Emma. (2010) Acute Multidimensional Poverty: A New Index for Developing Countries OPHI Working Paper No. 38. Oxford Poverty & Human Development Initiative (OPHI) Oxford Department of International Development Queen Elizabeth House (QEH), University of Oxford

Allaudin, T. (1975) Mass Poverty in Pakistan: A Further Study" The Pakistan Development Review 14:4

Altaf, M. A., Ercelan, A., Bengali, K. & Rahim, A. (1993), 'Poverty in Karachi: incidence, location, characteristics and upward mobility' The Pakistan Development Review 32:2 159-178

Altaf, Z. (2004), 'Poverty; Practical solutions to Pakistan's economic problems' Ushba publishing International Pakistan ISBN 969-8588-38-8

Amjad (1984)

Amjad, R., & Kemal, A. R. (1997), 'Macroeconomics Policies and their impact on Poverty Alleviation in Pakistan' The Pakistan Development Review 36:1, 39-68.

Anand, S. (1977), 'Aspects of poverty in Malaysia' Review of Income and Wealth, 25(1): 1-16

Anwar, T. & Qureshi, S. K. (2002), 'Trends in absolute poverty in Pakistan: 1990-91 and 2001' The Pakistan Development Review 41:4 Part II 859-878

Anwar, T. (2005), 'Prevalence of relative poverty in Pakistan' The Pakistan Development Review 44:4 Part II 1111-1128

Arif, G. M. & Bilquees, F. (2006) 'Chronic & Transitory poverty in Pakistan: evidence from a longitudinal household survey' MIMAP technical paper series # 19

Atkinson, A.B. (1985) 'how should we measure poverty?', ESRC pogramme on taxation, incentives and the distribution of income, Discussion Paper 82.

Barro, Robert J. & Lee, Jong-Wha, 1993. 'International comparisons of educational attainment,' Journal of Monetary Economics, Elsevier, vol. 32(3), pages 363-394, December.

Basarir, Hasan 'On multidimensional measurement of poverty: An empirical study on South Africa' University of York.

Betson, David, "Poor Old Folks: Have Our Methods of Poverty Measurement Blinded Us to Who is Poor?" University of Notre Dame, Poverty Measurement Working Paper, Census Bureau,1995b.

Bourguignon, F. and Chakravarty, S. R..2003. 'The measurement of multidimensional poverty', *Journal of Economic Inequality,* 1 (1): 25–49.

Camfield, L, and McGregor, A. (2005) 'Wellbeing in developing countries: new approaches and research strategies', Cambridge: Cambridge University Press & WeD Working Paper, no: 19;

Carvalho, Soniya & White, Howard (1997) 'Combining the Quantitative and Qualitative Approaches to Poverty Measurement and Analysis' World Bank Technical Papers No. 366 ISBN 0-8213-3955-9

Chakravarty, S. (1983), 'An index of poverty' Mathematical Social Sciences, 6(3): 307-313

CIA fact book (2006)

Clark, S., Hemming, R. & Ulph, D. (1981), 'On indices for Measurement of poverty' The Economic Journal, 91:515-526

Colgan, A-L (2002) 'Hazardous to health: the World Bank and IMF in Africa' Africa Action.

Deepa Narayan-Parker (1998, 2000) 'Measuring empowerment: cross-disciplinary perspectives' The World Bank Publications

Devarajan, Shanta. (2010), 'Africa can----end poverty'

Development Studies, 42 (2): 226-247.

Economic Survey of Pakistan 2005-06, 2006-07

Exclusion in South Africa Using Qualitative and Quantitative Data", Journal of

Firoze, B. (1986) 'the origins of inflation in Pakistan, 1959-82: an evaluation of alternative hypothesis' PhD thesis submitted to Manchester University

Foster, J., J. Greer, E. Thorbecke, (1984) 'A class of decomposable poverty measures' Econometrica 52, 761-765

Foster, J.E. (1998) 'Absolute Versus Relative Poverty' The American Economic Review, 88, 335-341.

Foster, J.E. (2006) "Poverty Indices" in poverty, inequality and development: essays in honor of Erik Thorbecke' Economic Studies in Inequality, Social Exclusion and Well-Being. New York: Springer, 41-65.

Foster, James E. (2007) A Report on Mexican Multidimensional Poverty Measurement OPHI Working Paper No. 40. Oxford Poverty & Human Development Initiative (OPHI) Oxford Department of International Development Queen Elizabeth House (QEH), University of Oxford

Garner, Thesia I. and Short, Kathleen "Experimental Poverty Measures Under Alternate Treatments of Medical Out-of-Pocket Expenditures." Monthly Labor Review, August 2002, pp. 3-13.

Garner, Thesia, and Kathleen Short. "Economic Well-Being Based on Income, Consumer Expenditures and Personal Assessments of Minimum Needs" (2004) BLS Working Paper 381, March 2006.

Gazdar, H., Stephen, H., & Zaidi (1994) Recent Trends in Poverty in Pakistan STICERD, London School of Economics Background paper for Pakistan poverty assessment (micro graphed)

George, S. (1990) 'A Fate Worse Than Debt' New York: Grove Weidenfeld, pg. 143, 187, 235

Gottschalk, Smeeding & Timothy (1997)

Griesez, G., Boyle, J., Finnis, J. (1987), "Practical principles, moral truth and ultimate ends", *American Journal of Jurisprudence*, Vol. 32 pp.99-151.

Haq, Mahbub ul. (1976) The Poverty Curtain: Choices for the Third World. Columbia University Press. 247 pages. ISBN 0231040628

Haq, R. (2005), 'An analysis of poverty at the local level' The Pakistan Development Review 44:4 Part II 1093-1109.

http://hdr.undp.org/en/statistics/

http://www. globalissues.org/TradeRelated/SAP.asp

http://www.adb.org/Documents/Studies/Eco_Pov_Ban/Eco_Pov_ban.pdf

http://www.eadi.org/fileadmin/MDG_2015_Publications/Basarir_PAPER.pdf

http://www.lahoreschoolofeconomics.edu.pk/JOURNAL/Special%20Edition%202008/Sajjad%20Akhtar.doc

Human condition report (2003) Centre for Research on Poverty Reduction and Income Distribution CRPRID

Human Development in South Asia 2006: Poverty in South Asia Challenges and Responses Mahbub-ul Haq Human Development Center Islamabad

Human development report (2006) World Bank

Hussain, F., Qasim M.A. & Sheikh, K. H. (2003), 'Analysis of public expenditure on education in Pakistan' Paper no. 2722 MPRA Paper series, Pakistan Institute of Development Economics.

Interim Poverty Reduction Strategy Paper.

Irfan, M. (2003) 'Poverty & Social Safety Nets: A case study of Pakistan MIMAP technical paper series # 15

Jafri, S. M. Y. & Khattak, A. (1995), 'Income inequality & poverty in Pakistan' Pakistan Economic and Social Review 33

Jafri, S. M. Y. (1999), 'Assessing poverty in Pakistan' In a profile of poverty in Pakistan, Mahbub-ul-Haq centre for Human Development.

Jamal, H. (2005), 'In search of poverty predictors- the case of urban and rural Pakistan' The Pakistan Development Review 44:1 37-55

Kakwani, N. & Son, H.H (2003) 'Pro-poor growth; concepts and measurement with country case studies. The Pakistan Development Review Vol. 42:4 417-444

Kemal, A.R. (1994) 'Structural Adjustment, employment, income distribution and poverty' The Pakistan Development Review 33:4 Part II pp 901-914

Kemal, A.R. (2003) 'Institutional change, growth and poverty levels in Pakistan' The Pakistan Development Review vol. 42, No. 4, pg 299

Kemal, A.R. (2003) 'Structural Adjustment & poverty in Pakistan' MIMAP technical paper series # 14

Klein, N. (2007), 'The Shock Doctrine- the rise of disaster capitalism' Penguin books ISBN: 970-0-141-02453-0

Kurijik, D.H., & Van M.L. (1985) "Changes in Poverty and Income Inequality in Pakistan during the 1970s" The Pakistan Development Review 24:3 & 407-19

Len Doyal and Ian Gough.A Theory of Human Need, 1992 ISBN 0-333-38325-7

Malik (1994) 'poverty in Pakistan: 1984-85, 1987-88 & 1990-91' Washington DC IFPRI (micro graphed)

Malik, M. H. (1988) 'some new evidence on the incidence of poverty in Pakistan' The Pakistan Development Review 27:4 509-15

Malik, S.J. (1996) 'Determinants of rural poverty in Pakistan: A micro study. The Pakistan Development Review 35:2 171-87

Mangahas, Mahar. The relevance of poverty measurement to food security policy. Journal of Philippine Development 1984 Vol. XI No. 2, pp. 191-202

Mujahid, G. B. S. (1978), 'A note on measurement of poverty and income inequalities in Pakistan- some observations on methodology' The Pakistan Development Review 17:3

Naseem, S. M. (1973), 'Mass poverty in Pakistan: some preliminary findings' The Pakistan Development Review 12:4

Naseem, S. M. (1977), 'Rural poverty and landlessness in Pakistan' In poverty and landlessness in Asia. Geneva: ILO

Nunes, C. (2008), 'Poverty measurement: the development of different approaches and techniques' Working paper 93, ECINEQ working paper series.

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

Orshansky, M. (1963), 'Children of the poor' Social Security Bulletin, 26, 3-13.

Orshansky, M. (1965) 'counting the poor: another look at the poverty profile.' Social security bulletin, 28 (January): 3-29.

Pakistan: Now the Poverty Bomb goes off, M, Ziauddin, Third World Network

Piachaud, D. (1988), 'Poverty and inequality: Analysis and action' Mimeo, London School of Economics

Poverty in Pakistan: Issues, Causes, and Institutional Responses. Asian Development Bank.

PRSP 2001-2005 'Expenditures & outcomes' Report 2, CRPRID Research report series.

Qureshi, S.K. & Arif, G.M. (2001) 'Profile of poverty in Pakistan' MIMAP Technical Paper Series # 5

Ravallian, M. (1996) 'issues in measuring and modeling poverty' economic journal, 106 (438), 1328-1343

Ravallian, M. (1998) 'poverty lines in theory and practice, LSMS working paper no. 133, Washington: World Bank Publications

Ravallion, M. and Datt, G. 2002. Is India's Economic Growth Leaving the Poor Behind? World Bank, Policy Research Working Paper No. 2846.

Ravallion, Martin & Sen, Binayak, 1994. "When method matters : toward a resolution of the debate about Bangladesh's poverty measures," Policy Research Working Paper Series 1359, The World Bank.

Ravallion, Martin and Bidani, Benu. 1994 How Robust Is a Poverty Profile? The World Bank Economic Review, VOL. 8, NO. 1: *75* -102

Ravallion, Martin. (2010), 'critique on the new UN poverty Index' at http://www.oxfamblogs.org/fp2p/3p=3070

Rawls, John (1993). *Political Liberalism.* NY: Columbia

Ringen, S. (1988), 'Direct and indirect measures of poverty' Journal of social policy, July, 351-365

Saunders, P. & Bradbury, B. (1991), 'Some Australian evidence on the consensual approach to poverty measurement' Social policy research centre, University of New South Wales.

Sawhill, I.V. (1988), 'Poverty in the U.S.: why is it so persistent?' Journal of Economic Literature, 1073-1119

Sen, A. (1976), 'Poverty: An Ordinal Approach to Measurement', Econometrica, 44: 219-31.

Sen, A. (1977), "Rational Fools: A Critique of the Behavioral Foundations of Economic Theory", Philosophy and Public Affairs, Vol. 6, No. 4. pp. 317-344;

Sen, A. (1979), 'The welfare basis of real income comparisons' Journal of Economic Literature 17.

Sen, A. (1982), 'Poverty and Famines: An Essay on Entitlements and Deprivation', Oxford, Clarendon Press

Sen, A. (1984), 'The welfare basis of real income comparisons' Reprinted in Resources, Values & Development.

Sen, A. (1985), 'Commodities and Capabilities' Amsterdam: North-Holland.

Sen, A. (1999), 'Development as Freedom', Oxford: Oxford University Press ISBN: 0-19-829758-0

Sen, A. K, (1981), 'Poverty and Famines: An Essay on Entitlements and Deprivation' Oxford University Press. ISBN: 0-19-828463-2

Seth, Suman. (2009) A Class of Association Sensitive Multidimensional Welfare Indices OPHI Working Paper No. 27 Oxford Poverty & Human Development Initiative (OPHI) Oxford Department of International Development Queen Elizabeth House (QEH), University of Oxford

Shah, A. (2007) 'Structural Adjustment- a Major Cause of Poverty'

Shiraizi, N.S. (1995), 'Determinants of poverty in Pakistan' Pakistan Economic and Social Review 33:1 & 2 91-101.

Short, Kathleen, "Experimental Poverty Measures: SIPP 1996", U.S. Census Bureau, Poverty Measurement Working Paper, August 2001c.

Silber, J. (2007), 'Measuring poverty: Taking a multidimensional perspective' Working paper 14, FEDEA working paper series

Singh, K. (2005), 'Questioning globalization' Zed books, London & New York, ISBN: 1-84277-278-3

The World Fact book - Pakistan

Thorbecke, E. (2005), 'Multidimensional poverty: conceptual and measurement issues' paper prepared for *The Many Dimensions of Poverty* International Conference, UNDP International Poverty Centre, Brasilia, August 29-31, 2005

Tomlinson, J. (2001), 'The Basic Solution to Unemployment. Australian Journal of Social Issues' Vol. 36, No.3 237-248.

Townsend, P. (1979) 'poverty in United Kingdom: A survey of household resources and standards of living', Berkeley: university of California Press

United Nations 2003, World Summit on Sustainable Development: Johannesburg, 2002, Political Declaration and Plan of Implementation.

Watts, H. (1968) 'An economic definition of poverty', in D. P. Moynihan, ed., On Understanding poverty, New York: Basic Books

World bank, UNDP question poverty estimates in Pakistan. OneWorld.net (South Asia).

Zaidi, M. A. & De Vos, K. (1994), 'Trend analysis of relative poverty in Pakistan (1984-85 – 1987-88)' The Pakistan Development Review 33:4 Part II 915-934

Zaidi, S. A. (2005), 'Issues in Pakistan's Economy' Oxford University Press ISBN 978-0-19-597914-5

6. Annex 1: Dimensions, Indicators, and Poverty Cut-Offs Analogous to Year 2006-07 PDHS Questions (16)

Individual has been used as unit of analysis. As Alkire Foster measure of multidimensional measure has been used in this research. Effort was made to keep the variables as similar as possible. However, due to non-availability of data land, health, child status and empowerment could not be used.

Table 1: Dimensions and Indicators

SR. NO.	DIMENSIONS OF Alkire-Foster MEASURE	DIMENSIONS OF 2006-07 PDHS data set
1.	**Living Standard**: [Housing (type of house) + electricity]	Living Standard: [Housing (main floor, roof and wall material) + electricity]
2.	Health: BMI	--------
3.	**Water and Sanitation**: [drinking water + type of toilet facility]	**Water and Sanitation**: [drinking water + type of toilet facility]
4.	**Air Quality**: [type of cooking fuel]	**Air Quality**: [type of cooking fuel]
5.	**Assets**:[mattress, thresher, pressure cooker, tractor, table, radio, electric fan, refrigerator, black & white TV, motorcycle, colour TV, car, computer, phone]	**Assets**:[refrigerator, TV, car, AC/ room cooler, washing machine]

6.	**Education:** [max education in single years]	**Education:** [max education attained by any member]
7.	**Livelihood:** [occupation of respondent and partner]	**Livelihood:** [occupation of respondent and partner]
8.	**Child Status:** [school attendance + child labor]	---------
9.	**Empowerment:** [decision making about going anywhere by the lady]	----------

Questions, definitions and poverty cut-off points of the dimensions and indicators used for the current study using demographic and health survey 2006-07 are as follows.

1. LIVING STANDARD: (Type of House + Electricity)

This dimension corresponds to *Question 109,110,111& 107* in the PDHS questionnaire

Question 109 main material of floor (MFM): **natural floor, earth/sand/mud floor,** finished floor: chips/terrazzo, ceramic tiles, marble, **cement**, carpet, **bricks**, mats, **other**.

Question 110 main material of roof (MRM): **natural roofing: thatch/bamboo/wood/mud, rudimentary roofing, cardboard/plastic**, finished roofing: iron sheets/asbestos, t-iron/wood/brick, reinforced brick cement/RCC, **other**.

Question 111 main material of walls (MWM): **natural walls: mud/stones, bamboo/sticks/mud, rudimentary walls: unbaked bricks/mud, plywood sheets, carton/plastic,** finished walls: stone, blocks, baked bricks, cement blocks/cement, **tent, others.**

Question 107 has electricity: yes, **no.**

Poverty Cut-off Z_1 – in each question **bold ones** were considered as poor and allotted 1 value and non bold ones were considered as non-poor and allotted 0 value. Poverty cut-off denotes the situation under which a household is deprived in any two of the above mentioned indicators.

2. WATER & SANITATION: Source of drinking water +Type of toilet facility

This dimension corresponds to *Question 101 &105* in PDHS 2006-07 survey.

Question 101 Source of drinking water: piped water: piped into dwelling, piped into yard, plot, **public tap/stand pipe**, tube well/borehole, hand pump, dug well: protected well, **unprotected well,** water from spring: protected spring/karez, **unprotected spring, rainwater,** tanker truck, cart with small tank, **surface water (river/dam/lake/pond/stream/canal),** bottled water, other.

Question 105 type of toilet facility: flush or pour flush toilet: flush to sewer system, flush to septic tank, flush to somewhere else, flush to don't know where, Pit latrine: ventilated improved, **pit latrine with slab, pit latrine without slab, open pit, bucket toilet, hanging toilet/latrine, no facility/bush/field,** other.

Poverty Cut-off Z_2 – in each question **bold ones** were considered as poor and allotted **1** value and non bold ones were considered as non-poor and allotted 0 value. Poverty cut-off denotes the situation under which a household is deprived in at least any one of the above mentioned indicators.

3. AIR QUALITY: type of cooking fuel

This dimension corresponds to *Question 108* in PDHS survey 2006-07.

Question 108: Type Of Cooking Fuel In Use: Electricity, Cylinder Gas, Natural Gas, Biogas, **Kerosene, Charcoal, Wood, Straw/Shrubs/Grass, Agricultural Crop, Animal Dung**, No Food Cooked In House, Other.

Poverty Cut-off Z_3– **bold ones** were considered as poor and allotted **1** value and non bold ones were considered as non-poor and allotted 0 value. Poverty cut-off denotes the situation under which a household is deprived in at least any one of the above mentioned indicators.

4. ASSET: Access to different assets

This dimension corresponds to *Question 107 & 114* in PDHS survey 2006-07.

Question 107: does your HH have Refrigerator, TV, AC/room cooler, and Washing machine? Yes/**no**

Question 114: does your HH have Car/truck? Yes/**no**

Poverty Cut-off Z_4– if owns at least two out of these five assets. **bold ones** were considered as poor and allotted **1** value and non bold ones were considered as non-poor and allotted 0 value. Poverty cut-off denotes the situation under which a household is deprived in at least any one of the above mentioned indicators.

5. EDUCATION: Highest education level attained by the family members

This dimension corresponds to *Question v106* in PDHS survey 2006-07.

Question V106: maximum education by any member

Poverty Cut-off Z_5– Maximum year of education completed by any member is less than five years. in each question **bold ones** were considered as poor and allotted **1** value and non bold ones were considered as non-poor and allotted 0 value. Poverty cut-off denotes the situation under which a household is deprived in at least any one of the above mentioned indicators.

6. LIVELIHOOD: Occupation of the respondent and her partner

This dimension corresponds to *Question v705 & v717* in PDHS survey 2006-07.

Question V705: Respondent's occupation: **not working**, prof/ tech/ manag, clerical, sales, agri/self emp, **agri-emp**, **HH & domestic**, services, **skilled manual, unskilled manual**.

Question V717: Partner's occupation: **not working**, prof/ tech/ manag, clerical, sales, agri/self emp, **agri-emp**, **HH & domestic**, services, **skilled manual, unskilled manual**.

Poverty Cut-off Z_6 – in each question **bold ones** were considered as poor and allotted **1** value and non bold ones were considered as non-poor and allotted 0 value. Poverty cut-off denotes the situation under which a household is deprived in at least any one of the above mentioned indicators

7. Annex 2: TABLE OF ACCEPTABLE DIMENSIONS AND INDICATORS

Authors	Rawls (1972)	Finnis, Grisez, and Boyle (1987)	Doyal and Gough (1993)	Nussbaum (2000)	Narayan-Parker (2000)	Camfield (2005)
Defining concepts	Primary goods	Basic human values	**Basic Needs** and Intermediate needs[a]	Central human functional capabilities	Dimensions of well-being	Quality of life
Bodily well-being		Bodily life – health, vigour and safety	**Physical health.** -Nutrition: food and water -Health care -Safe birth control and child bearing -Safe Physical environment	Life Bodily health Bodily integrity	Bodily well-being Access to health services Good physical environment	
Material well-being	Income and wealth		Protective housing Economic security		Material well-being Food Assets	Food Shelter
Mental development		Knowledge Practical reasonableness	Basic education	Senses, Imagination, Thought Emotions Practical reason Play		Education (Bangladesh and Ethiopia, not Thailand or Peru)
Work	Freedom of occupation	Skillful performance in work and play	Work		Work	
Security			Physical security		Civil peace Physically safe environment Lawfulness (access to justice) Personal physical security Security in old age	
Social relations	Social bases of self-respect	Friendship	Significant primary relationships	Affiliation Social bases for self-respect	Social well-being -Family -Self-respect and dignity -Community relations	Family
Spiritual well-being		Self-integration Harmony with ultimate source of reality				Religion (important in Bangladesh and Thailand)
Empowerment and political freedom	Rights, liberties, opportunities Powers and prerogatives of office and positions of responsibility Freedom of movement		**Autonomy of agency** Civil and political rights Political participation	Control over one's environment	Freedom of choice and action	
Respect for other species				Other species		

8. Annex 3: POVERTY ALLEVIATION MEASURES IN PAKISTAN

Poverty alleviation programs in Pakistan can be categorized into four major categories: programs generating income and employment opportunities, social and human development, infrastructure & community development programs and social protection or security measures.

Irfan (2003) has explained the structure of social security and insurance in Pakistan and stresses their role in poverty reduction. He quoted article 38 d and e of constitution of Pakistan which makes it the responsibility of the government to provide food, clothing, housing, education and medical relief to the people of Pakistan. To fulfill that poverty alleviation programs[23] are being run in Pakistan. Irfan has divided them into three major categories.

(i) SOCIAL SECURITY SCHEMES FOR WORKERS:

These include pension for government servants (persons with 25 years of active service or 60 years of age at their retirement receive pension and other benefits under pension funds scheme), civil servants pension, general provident and benevolent fund, employees old age benevolent fund and other private companies pension.

(ii) MICROCREDIT SCHEMES:

Since 1950's, there have been programs going on to increase the access to institutional credit. Like India nationalization of the banking services was done in Pakistan with the view of putting pressure on the commercial banks to extend their services in rural poor. However, since

[23] Details of these programs are courtesy to Mahbub-ul-Haq center of human development , development report of South Asia 2006 (HDRISA 2006) and Dr. Irfan (2003).

1970's the role of credit was not only seen as mere fund channeling but it has been used to create social justice by lending at lower rates to the poor community. Intermediaries, however, proved a big hindrance in doing so. By 1990's it was realized that the main problem of the poor is the high rate of interests charged by these intermediaries. Therefore, many different institutions and banks have evolved to increase the access to small credit. Pakistan Poverty Alleviation Fund (PPAF), Agricultural Development Bank (ADBP), First Women Bank, National Rural Support Programme (NRSP), Khushhali Bank, Small and Medium Enterprises (SME) Bank and Micro Finance Bank are some of the public avenues for small credit. Coverage of micro credit by all these avenues is limited and cannot cater the substantial demand for credit. Legislation has been made to let private parties enter this zone as well (Tameer Bank, Agha Khan Rural Support Program and KASHF Microfinance Bank are few prominent names in this regard). National banks also have some facilities of micro credit. However, due to the collateral requirements these are not very successful. Most of the Rural Support programs (RSPs) are concentrated in NWFP and only minute number is working in Baluchistan and Rural Sindh. Therefore, due to general lack of transparency, poor targeting, inadequate depth and low infrastructural support these programs could only have little impact on poverty reduction and human development. The proof of this fact is that despite good pace of economic growth in the past ten years in Pakistan and all these programs and institutions' working together, 1/4th of her population is still living below the poverty line. (HDRISA 2006)

(iii) TRANSFERS TO THE POOR:

Zakat, bait-ul-maal, private transfers, employs generation returns and social services are some of these options availed by the government.

a. ZAKAT:

The Zakat and Ushr ordinance was publicized in 1980 on the belief that paying Zakat is obligatory upon every rich Muslim. It is collected and distributed by Central Zakat Council with the help of provincial, district, tehsil and local Zakat committees. Zakat is deducted at source by companies and financial institutions. The money collected is then deposited in the Central Zakat Fund maintained by the State Bank of Pakistan.

For disbursement these funds are transferred from central to provincial then to district and then to local Zakat committees. Zakat is the principal form of the cash transfer program in Pakistan. There are two main types of support, the 'Guzara' or subsistence allowance and the 'Permanent Rehabilitation Grant' these take 70% of the Zakat budget. These 'regular' programs are funded by the provincial Zakat committees and the remaining 30% budget goes to 'other' programs which get their funding from central Zakat council. 'Guzara' allowance is the main cash transfer program run under Zakat funds. It is paid at 500 Rs per month to the eligible and is one of the main instruments of support wielded by local Zakat committee. An eligibility criterion includes people living below poverty line (Rs 670/ month) with preference to widows and disabled, unemployed and not habitual beggars. Local or district Zakat committee is responsible for establishing eligibility and the list is then pasted outside the local mosque. Three different categories of educational assistance (primary to intermediate, post graduate and technical education and Deeni Madaris) are also provided under Zakat. Zakat is also used to finance healthcare managed at provincial and central levels through 80 registered hospitals/institutions at a rate of Rs. 2000 for indoor and Rs. 1000 for outdoor patient. Marriage expenses to eligible women (established by Local Zakat Council) are also given up to Rs 10,000 by Zakat fund. A

one-time grant of average 17,000 Rs is also given as Permanent Rehabilitation Scheme (PRSZ).[24]

Under different above mentioned programs of Zakat around 1.6 million Mustahiqeen (eligible) people are being supported. Positive aspects of this Zakat system include its fiscal sustainability, its strong redistribution function and low administrative cost due to its voluntary nature. Despite these positive elements there are drawbacks which undermine this program. First of all it lacks financial transparency, it has modest coverage with inadequate assistance per beneficiary, targeting is weak so the non-poor get the benefit. Poorest 20% most eligible only get 40% representation, and lastly identification of poor is weak. Political influence is there on every level of Zakat committees which leads to leakages and corruption (Human development report in South Asia 2006 by Mahbub-ul-Haq center of human development)

According to CRPRID report on PRSP 2001-05 "under non-budgetary disbursements, Zakat disbursements increased sharply in early years but declined rapidly since 2003. Subsequently beneficiaries also decreased. Beside lower disbursements evidence also shows that these expenditures are not well targeted. Overall non-budgetary expenditures need to be enhanced, streamlined and properly targeted."

b. PAKISTAN BAIT-UL-MAAL (PBM):

[24] Further info about Zakat can be seen from

http://www.pakistan.gov.pk/.../ZakatCollectionandDistributionSystem.doc

http://www.sindh.gov.pk/dpt/Zakar%20&%20Usher/REVISED%20ZAKAT%20DISBURSEMENT%20PROCEDURE.pdf

Established under specific act of 1991 PBM is an autonomous corporate body under administrative control of ministry of women development, social welfare and special education. Many programs to assist needy and destitute are being run under PBM.[25] Two main programs are Food Support Program (FSP) and Individual Financial Assistance (IFA). FSP was launched initially in 1992 which has since been reinitiated with different names in 1994, 1997, 1999, 2000 and latter. Sometimes it was Atta subsidy, 'Sasti roti' program or food subsidy scheme. Most of these were unsuccessful due to poor implementation. To qualify for food subsidy a household needed to be at less than 1500 Rs/ month earning limit. In year 2000 I was a cash transfer program with a budget of Rs 2.5 billion. Rs 2400 / annum were to be transferred to a family living at less than Rs 2000 a month in two bi yearly installments each. Whereas, IFA has the prime objective of helping the poor, destitute women, orphans and disabled persons through medical treatment, education stipends, rehabilitation and general assistance. PBM due to it's over dependency at budgetary support is vulnerable to economic shocks. Its targeting is so poor that 25% of the poorest 20% get the benefit. Its size of assistance is negligible. Targeting of areas is on the basis of population and one area may be having larger population with less number of poor. First com first serve basis also leaves un-opportunate poor out. There is no formal allocation system which leads to more chances of leakages and corruption. A data base of poor population needed to run such programs is missing. (HDRISA 2006)

c. THE KHUSHHAL PAKISTAN PROGRAMMME (KPP):

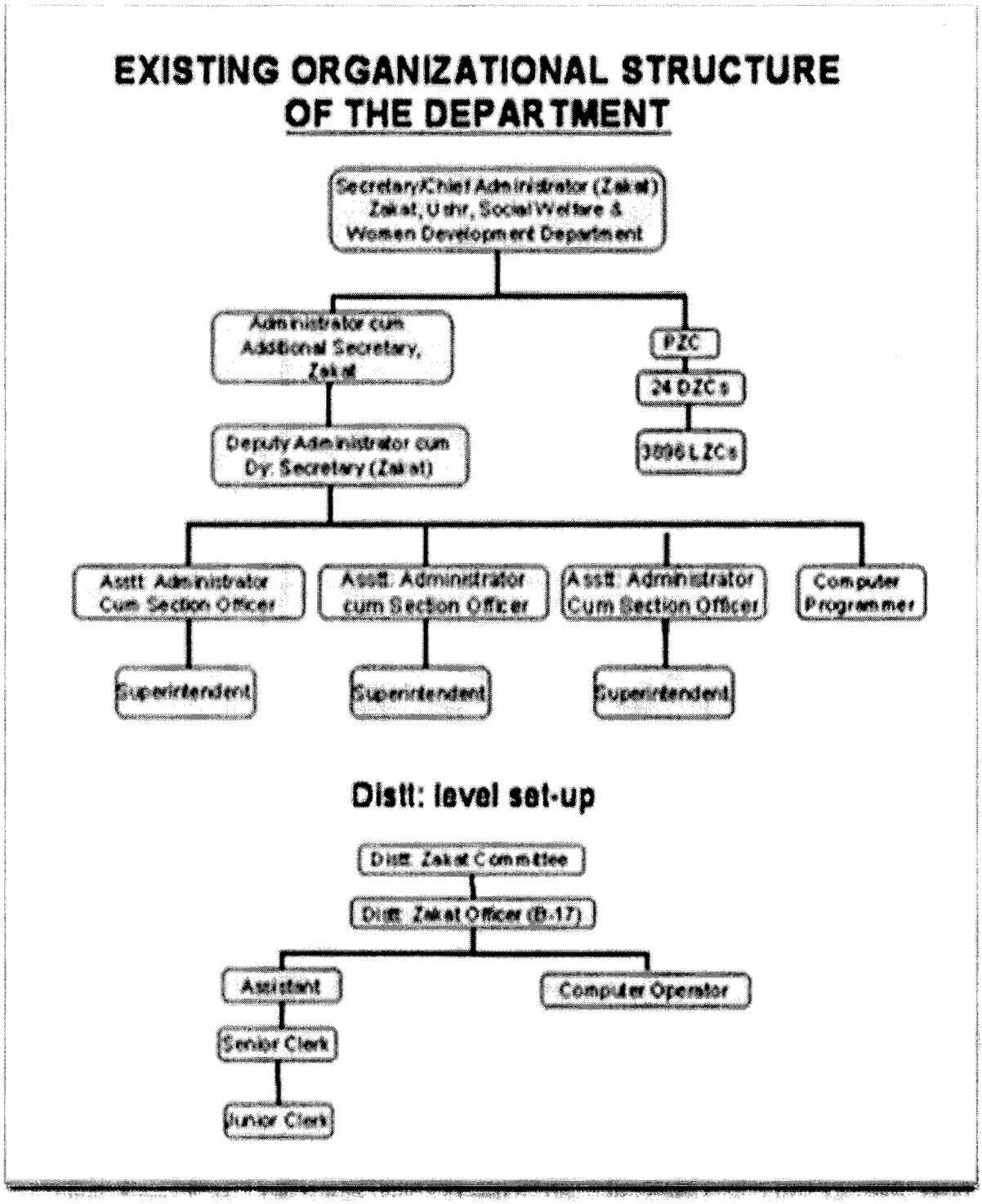
This is a combination of multiple smaller programs including, **Village Agricultural and Industrial Development Programme (V- AID), Basic Democracies (1959-70), Integrated**

[25] http://bmis.punjab.gov.pk/common/frmaboutus.aspx

Rural Development Programme (IRDP) 1972-80, Peoples Works Programme (1972-77), Local Govt. and Rural Development Programme, Prime Ministers Five Point Programme (1985-88), Peoples Programme (1988-90 and 93-97), Tameer-e-Watan Programme (1991-93 and 1998-2000), Social Action Programmes (SAP) (SAP was launched in 1992-93 with the objective of furthering social development. After completion of SAP Phase-I (1993-96), the government initiated another five and half year SAP Phase-II. The main focus of Phase-II was also on the four priority areas of social sectors namely, (i) elementary education, (ii) primary-health and population, (iii) rural water supply and sanitation, and (iv) population welfare and cross sectoral strategies), **Khushhal Pakistan Programme, Tameer-e-Pakistan Programme (TPP), Khushhal Pakistan Programme-I (KPP-I)** (This again is actually not a single program but a number of different programs tied together under same name due to their similar nature).

Each of these programs were budget dependent, short lived, inadequate and with no specific allocation plans. Therefore, they did the job creation but it was temporary, till the time a program was functional. Much more was required to be done and local community should have been involved through participatory approach to increase their effectiveness.

Fig A: ZAKAT DEPARTMENTAL STRUCTURE:



Source:http://nwfp.gov.pk/Zakat/Department/OrganizationStructure.php

9. Annex 4: POLITICS AND POVERTY CONDITION IN PAKISTAN

Discussing the trends of poverty he has shown that during 1950's growth was stagnated poverty persisted and at that time there was no concept of inequality measurement. In 1960's there was a rapid increase in growth however, poverty kept on increasing. At that time inequality (measured by Gini-coefficient) showed improvement. During 1970's growth rate slowed and then stagnated poverty declined (High foreign remittances from middle east) but inequality worsened. In 80's there was rapid increase in growth (Zia as Marshal Law administrator & later president) poverty kept on declining but surprisingly inequality saw rapid increase and then decrease. 90's brought with them low growth rates and considerable increase in poverty with worse inequality (This trend continued till the time of Musharaf when again in 2000's growth rate started increasing and poverty was claimed to be decreased. However, the times that we are living today, Pakistan is facing economic crisis with very high level of unemployment and increasing poverty. Inequality has created the crisis in Baluchistan. High inflation rates have made living for all a tough job).

Table A: INEQUALITY AND POVERTY IN PAKISTAN

POLITICAL REGIME	POVERTY TREND	INEQUALITY TREND	REASONS
1947-58	DECLINED	INCREASED	Extreme struggle for survival and then mercantilist gains during and after Korean war 1952
1958-68	DECLINED	INCREASED	Agricultural revolution done by feudal with the money gained during past few years
1969-77	INCREASED	DECREASED	Oil crisis, natural disasters (floods and crop failures) and nationalization with no foreign financial support. But jobs were created due to nationalization.
1979-88	DECREASED	INCREASED	Funds received for helping America against soviet union, industrialization
1989-2000	INCREASED	INCREASED	Structural adjustment started leading to debt increase, low investment, high inflation, tax theft, welfare cuts, and unemployment.
2001-2009	INCREASED	INCREASED	Same policies of structural adjustments continued to be used worsening the situation both in poverty levels and inequality.

Source: Zaidi (2005), Kemal (2003) & various issues of economic survey from finance division of Pakistan