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**Zentrum für internationale Entwicklungs- und Umweltforschung der  
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**Multiple Dimensions of Regional Variation of Impoverishment in Iran**

by

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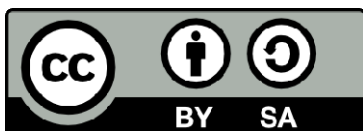
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## ABSTRACT

Concerning the demands of Sen's (1987) Capabilities Approach to assessment of human well-being, the paper estimates the values of frequency and breadth of multidimensional poverty in Iran. It distinguishes specific regions as Tehran, other urban areas, and rural areas and it reveals that the proportion of rural areas in multidimensional poverty has increased from 1999 to 2007, in spite of relatively high rate of GDP growth in that period. It also detects the specific socio-economic group's deprivation type which is invaluable information for effective policy targeting.

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## **1. Introduction**

Like in many developing countries, poverty is a serious challenge in the economy of Iran. It also has played a significant role in political debate during the recent decades in Iran. The Islamic revolution claims that it puts itself up on a social base mainly formed by the poor. However, after more than three decades during which the revolution tried different policies from wide-ranging nationalization and subsidization for basic commodities in the first decade to the pro-market reforms which started by the second decade, poverty still is the central issue of political debate. Hence, the main issue of the last three presidential elections was about which party is more pro-poor.

In this context, there is a high demand to learn more about poverty in Iran. Nevertheless, there are only few studies of that case. Assadzadeh and Paul (2004) examined changes in the extent of poverty in Iran in the period 1983 to 1993. The analysis is based on household-level data relating to three Household Income and Expenditures Surveys of 1983, 1988, and 1993. The study reveals that the extent of poverty in the rural sector declined slightly, whereas in the urban sector it increased significantly. Decomposition of changes in poverty into growth and redistribution components indicates that in each sector the redistribution component was positive, implying that the deterioration of income inequality contributed to the worsening of poverty. The growth component, however, affected the two sectors differently: it contributed to a reduction in poverty in rural areas and an increase in urban areas. Another study by Salehi-Isfahani (2009) examined the trends in poverty and inequality for more than two decades after the revolution (1979-2005) and compares it with the pre-revolution years. It showed that poverty declined in the last decade of the studied period and was low in comparison with pre-revolution years.

Both these studies applied a one-dimensional poverty measure in their analysis. In contrast, our study intends to use a multidimensional poverty measure rather than a one-dimensional measure (e.g. income, commodity command), because a one-dimensional measure does not constitute or adequately represent human well-being and deprivation. Basically, poor people go beyond income in evaluating their experience of poverty. As Alkire and Foster argue “when poor people describe their situation, as has been found repeatedly in participatory discussions, part of their description often narrates the multiplicity of disadvantages that batter their lives at once. Malnutrition is coupled with a lack of work, water has to be fetched from an area with regular violence, or there are poor services and low incomes. In such cases, part of the experience and problem of poverty itself is that several deprivations are coupled – experienced together” (Alkire, and Foster, 2011-a, p.13). There is no single indicator, such as income or consumption, which is able to capture the multiple aspects that contribute to poverty in a comprehensive way. As a result, the present approach favors a multidimensional approach.

The discussion about the multidimensionality of poverty has been around in academic circles for many years. The theoretical reasons to measure welfare as a multidimensional phenomenon were brought forward in the late 1970s by Kolm (1977) and Sen (1984). Both authors criticized the use of income as the sole measure of poverty by a number of reasons. Kolm argued that the symmetry postulate usually assumed in welfare analysis is better achieved as more attributes of the individual are included in the welfare measure. And Sen argued that the traditional one-dimensional measurements cannot capture the impact of non-market goods and services and also individual heterogeneity on welfare achievement. Building on Kolm's and Sen's contributions, two strands of literature on multidimensional welfare measurement have emerged in the last two decades: the first in the theoretical

literature on inequality and poverty (Atkinson and Bourguignon (1982), Maasoumi (1999), Bourguignon and Chakravarty (2003)); and the second in the realm of applied welfare and development economics (e.g. Klasen (2000), Qizilbash (2002), Kuklys (2005)).

The discussion about multidimensionality of poverty has also been reflected in the Millennium Declaration and Millennium Development Goals (MDGs) which have highlighted multiple dimensions of poverty since 2000, as well as in the Human Development Reports since 2010. The literature has been blossomed by the work of the Oxford Poverty & Human Development Initiative (OPHI) since 2007.

The method used in this paper is the dual cutoff method developed by Alkire and Foster (2011-b). This method which is also called Alkire-Foster method or AF method, uses a counting approach to identifying ‘who is poor’ by considering the range of deprivations they suffer, and combines this with the Foster-Greer-Thorbecke (FGT) methodology. The FGT methodology is the most widely used class of income poverty measures and measures how income is distributed below the poverty line and incorporates the inequality among the poor. The resulting measure aggregates information to reflect societal poverty.

The AF method satisfies a range of properties. First, it has the ability to use ordinal data which is a useful property, since some of the dimensions of poverty have ordinal character. Second, despite of more presentations which leave identification unspecified or select criteria that seem less tenable over two dimensions, it can use more than two dimensions to identify the poor. Third, the method has the property of population decomposability which considers a key property for policy. The measure has the ability of breaking down by population subgroups to show the characteristics of multidimensional poverty for each group, and it even reveals the dimensional deprivations contributing most to poverty for any given group. And, fourth, it introduces a measure of the breadth of multidimensional poverty which provides



information on the breadth of multiple deprivations of the poor. Eventually it is easy to interpret.

The present study benefits the properties of the dual cutoff methodology in the case of Iran to show the extent and breadth of multiple deprivations (consisting of the three dimensions expenditure, literacy and well living standards) on three subgroups (rural, urban excluding Tehran, and Tehran) of Iran's population. The study focuses on the poverty situation in Iran in 2007, when economy has enjoyed an almost full decade of rather high income growth. Then, it compares the values of the indicators of 2007 with its values of 2003 and 1999, while it analyses changes over time among subgroups, aiming to provide a clear and more accurate picture of poverty in Iran.

The study identifies significant differences in poverty between the three regions that have been investigated: rural areas, urban areas, and Tehran. Besides, the gap in 2007 is greater than the gaps in 2003 and 1999. Although Iran experienced relatively high growth rates of its gross domestic product (GDP) from 1999 to 2007, the differences seem to have increased. Since the rural-urban gap is an important source of overall inequality, this result can be interpreted in a way that inequality at least among the different subgroups increased\_ despite of growth of GDP\_ which affects the improvement of welfare overall negatively.

The structure of the paper is as follows. Section 2 gives an overview of the economic policy in Iran, section 3 introduces the methodology of measuring multidimensional poverty which itself includes five sub sections, and then section 4 derives the results from empirical analysis, while section 5 offers some concluding remarks.

## **2. Economic Policy and Poverty Reduction in Iran**

In order to describe the contemporary macroeconomic context in Iran, it is helpful to go back some three decades. In 1979 the Islamic revolution happened, where the former Monarchy Regime was replaced by the Islamic Republic Regime. The political changes quickly triggered economic changes including a large-scale nationalization of banks and major industrial establishments, putting about 80% of total industrial production under the control of the government. Soon after the revolution Iran's economy was heavily hit by the prolonged, eight-year Iran-Iraq war (1980-1988). During the 1980s, the oil production plummeted as the consequence of war and lack of investment, and consequently the national income declined dramatically. However, during the war the Islamic republic government which identifies the poor as its main social base and proclaims social justice as its key policy objective, tried to protect the poor against wartime inflation by rationing of basic goods and extensive price controls that intensified the government's role in the economy.

After the end of the war in 1989, production of oil recovered and the Iranian government started economic reforms: Five-year plans gradually dismantled rationing and price controls, increased the role of markets in distribution of goods and services, and began the move away from state ownership of productive assets. In the first five-year plan the average growth of GDP was high, about 7.4% annually, to fill the free capacity of economy after the war. In the second five-year plan, however, the average growth of GDP decreased to 3.2% annually, primarily because of the decline of oil prices on the world market (Maroofkhani, 2009).

With the oil price increasing again in 1999, Iran's economy enjoyed a rise in growth of GDP during almost a decade until 2007. Table1 indicates the GDP growth rate of the economy of Iran during 1999-2007. Part of this growth has been due to increases in oil production and in oil prices on the world market. Between 1999 and 2006, oil production increased by 13.3

percent, a little more than one-fourth of the increase in GDP. Export prices for Iranian oil have risen much more rapidly, from an average of \$16.81 a barrel in 1999 to \$59.82 in 2006. As a result, revenues from oil exports more than tripled between 1999 and 2006. According to the IMF report (IMF, 2007), between 1999 and 2006 the average rate of GDP growth was 5.8 percent per year. Thus, Iran's recent economic growth can be attributed largely to rising international oil prices. In addition, positive growth also has been associated with expansionary monetary and fiscal policy reforms and also to the agricultural recovery (IMF, 2007).

Table 1. Real GDP Growth of Iran 1998-2008

Year	1999	2000	2001	2002	2003	2004	2005	2006	2007
GDP growth rate	1.9	5.1	3.7	7.5	7.1	5.1	4.6	5.9	7.8

Source: Central Bank of Iran

During the period under consideration, the political scene of Iran experienced both the governing of reformist and conservative hardliners. In 2005 the reformist government under the presidency of the Khatami was replaced by the government of the hardliners under the presidency of Ahmadinejad whose campaign platform promised a more equitable distribution of the national wealth and concentrating on removing poverty by populist slogans. During the first period of presidency of Ahmadinejad, he and his government were repeating the pro-poor slogans constantly. Following the slogans of election's campaign, they implemented a cheap-housing plan (known as Maskan Mehr plan), made national banks presenting cheap and quick loans for founding small enterprises and even gave money handed to the poor people in some cases. The first period under Ahmadinejad presidency leads the 2009 controversial election while the debates were mainly stays over which party is more pro-poor. From 2008 on, the GDP growth rate decreased as a consequence of the increasing pressure of international sanctions and mismanagement in the economic era.

### **3. Methodology of Measuring Multidimensional Poverty**

In order to measure multidimensional poverty the study uses the method which was introduced by Alkire and Foster (2011-b). The Alkire Foster method combines the “counting method” with the “FGT measure”, with the virtues of being intuitive and flexible, as it can be adapted to many contexts and it is easy to interpret. The AF method encompasses two parts: the process of identifying poor and the process of measuring poverty.

It is worth noting that using multidimensional measurement particularly AF method rises some challenge. Why do we use a composite index (composite indices do compress information on individual trends, so we may lose some information), instead of putting indices together in a dashboard approach (it means making a matrix of people’s achievement in different dimension without aggregation)? In respect of this challenge, the paper argues that the goal of designing a poverty measurement is to help us realizing who is poor actually, how many poor people are there, how poor they are, and how overall poverty has changed. These are the information that gives us some principal hints to design better poverty alleviation policies. A dashboard approach identifies who is deprived in each dimension, but it does not identify who is actually poor. The problem of dashboard approach is its heterogeneity. We need a method based on a concept of poverty as multiple deprivations that is simultaneously experienced, which particularly is useful for the politicians when they report the progress of pro-poor policies or comparing socioeconomic performances.

Hence, this section outlines the Alkire Foster methodology at first in tow subsection; identification of the poor, and measuring poverty. Then the methodology section continues with two subsections on selection dimensions and on data.

### 3.1. Identification of the poor

The process of identification of the poor in multidimensional measurement is more complicated than the identification in a one dimensional approach. While the one dimensional approach identifies people as poor if their achievement falls below a given threshold, the identification in a multidimensional approach with multiple variables is a more challenging task.

There are two common methods of poor identification in a multidimensional approach. The first one is the union method, by which a person  $i$  is considered as multidimensional poor if there is at least one dimension in which the person is deprived. And the second one is the intersection approach which defines person  $i$  as being poor only if the person is deprived in all dimensions. The disadvantage of union approach is that it tends to overestimate the number of the poor, while the disadvantage of intersection approach is that it underestimates the number of the poor. Therefore, the AF method suggests a natural alternative and calls it the dual cutoff approach; it provides an alternative approach that lies somewhere between the two extremes. This approach consists of two cutoffs; the deprivation cutoff and the poverty cutoff. The first cutoff identifies the deprivation of the unit of measurement in each dimension, while the poverty cutoff identifies the multidimensional poor people.

#### 3.1.1. Deprivation cutoff

For every dimension  $j$  there is a threshold  $z_j$ , under which the person  $i$  is considered deprived in that given dimension  $j$ . Hence if  $y_{ij}$  denote the achievement of person  $i$  in dimension  $j$ , the person  $i$  is deprived in dimension  $j$  whenever  $y_{ij} < z_j$ .

By deprivation cutoff, the method identifies only the deprivations and shows if a person is deprived in any of the different dimensions. However, poverty is a concept in which multiple deprivations are simultaneously experienced. Hence, only the aggregate index fully bears the

concept of poverty and gives a coherent summary statistic that conveys how overall poverty evolved. Therefore, we follow the next part of the methodology which is poverty cutoff.

### 3.1.2. Poverty cutoff

At this stage, the method identifies the persons who have sufficient deprivations to be considered poor. In order to identify who suffers from sufficient deprivations, the method introduces the second cutoff  $k$ . Hence, if  $c_i$  denotes the number of deprived dimensions a person owns, the person is identified as a poor if  $c_i > k$  and non-poor if  $c_i < k$ .

## 3.2. Measuring poverty

In order to measure poverty, the AF method introduces a set of definitions which are based on the FGT approach. However, the method firstly presents a progression of matrices for transition between the identification step and the aggregation step.

### 3.2.1. Censored matrices

Setting the achievements of  $n$  persons in  $d$  dimensions in a matrix gives the achievement matrix  $Y$ . In the deprivation matrix  $g^0$  we replace each entry in  $Y$  that is below its respective deprivation cutoff  $z_j$  with the deprivation value  $w_j$ , and each entry that is not below its deprivation cutoff with zero. Therefore, the deprivation matrix censors the value of non-deprived items, i.e. it focuses only on the deprived items. The  $g^0$  matrix provides a snapshot of frequency and breadth of deprivation among the population.

The normalized gap matrix  $g^1$  replaces each deprived item in  $Y$  with the respective normalized gap (i.e. the difference between the deprivation cutoff and the person's achievement divided by the deprivation cutoff) multiplied by the deprivation value. And it replaces each item that is not below its deprivation cutoff with zero. The normalized gap is only valid for the achievements which are cardinally significant. The  $g^1$  matrix represents a

snapshot of the depth of deprivation of each poor person in each deprived dimension, weighted by its relative importance.

### 3.2.1. The frequency of poverty

The AF method uses the headcount ratio  $H=H(y;z)$  to measure poverty. That variable is defined by  $H=q/n$ , where  $q$  is the number of the poor persons which are estimated by the dual cutoff method and  $n$  is the number of persons of the complete population. Therefore,  $q=q(y;z)=\sum_{i=1}^n \rho_k(y_i, z)$ , while  $\rho$  is the identification function;  $\rho(y_i;z)=1$  if  $y_i < z$  and person  $i$  is poor, and  $\rho(y_i;z)=0$  if  $y_i > z$  and person  $i$  is not poor.

$H$  has the virtue of being easy both to compute and to understand. But the problem is that when a poor person becomes deprived in a new dimension, the headcount ratio  $H$  does not reflect that change. In addition to that,  $H$  cannot be broken down and cannot show the contribution of each dimension to poverty.

### 3.2.2. The breadth of poverty

The AF method also introduces the variable  $M_0$  that reflects the concerns mentioned above. If  $A$  denotes the average deprivation share across the poor given by  $A=|c(k)|/(qd)$ , the headcount ratio  $H$  multiplying  $A$  gives the adjusted headcount ratio  $M_0$  which is sensitive both to the frequency and the breadth of multidimensional poverty.  $M_0$  also is defined as the mean of the censored deprivation matrix;

$$M_0 = HA = \mu(g^0(k))$$

If a poor person becomes deprived in a new dimension,  $M_0$  reflects that change. Furthermore,  $M_0$  can be broken down to show how much each dimension contributes to poverty.  $M_0$  has also the virtue of using pure ordinal data, which appear frequently in multidimensional approaches based on capabilities.

### 3.3. Criteria for Selecting Dimensions

Applying our multidimensional poverty measurement based on the capability approach brings forward the challenge of selecting dimensions. It is important to select dimensions which are convincingly meaningful in the poverty discourse. However, there is not a fixed list of dimensions or capabilities in the literature or there is no tendency to have such a fixed list as Sen mentioned: “Pure theory cannot freeze a list of capabilities for all societies for all time to come, irrespective of what the citizens come to understand and value. That would be not only a denial of the reach of democracy, but also a misunderstanding of what pure theory can do....” (Sen, 2004, p. 78) Or “To insist on a fixed forever list of capabilities would deny the possibility of progress in social understanding and also go against the productive role of public discussion, social agitation, and open debates” (Sen, 2004, p.80). In sum, Sen argues that key capabilities must be selected, but argues consistently against the specification of only one authoritative standard list of capabilities with the expectation of applying it at all times and places.

There are different lists of dimensions in the literature. Although the discussion of the basis of choice is rarely explicit, it seems, as Alkire (2008) argues, that most researchers draw implicitly on five selection methods, either alone or in combination. The five processes are: 1. Use existing data; 2. Make assumptions – perhaps based on a theory; 3. Draw on an existing list that was generated by consensus; 4. Use an ongoing deliberative participatory process; and 5) Propose dimensions based on empirical studies of people’s values and/or behaviors

An example of multidimensional index of wellbeing in terms of functioning achievements is the Multidimensional Poverty Index (MPI) developed by the Oxford Poverty & Human Development Initiative (OPHI) with the UN Development Programme (UNDP) for inclusion in UNDP’s flagship Human Development Report in 2010. The MPI includes ten indicators in



three dimensions; Health (nutrition, child mortality), Education (years of schooling, school attendance), Living Standard (cooking fuel, sanitation, water, electricity, floor, assets).

Due to the availability of reliable data, the present study draws on the following three variables: (1) expenditure, (2) education, (3) living standard; the weights of all three dimensions are identical. The population is partitioned into three groups: The rural population, the urban population excluding those living in Tehran, and the population of the city of Tehran. Tehran is treated as a distinct region because it accounts for more than 15% of Iran's population, it attracts migrants from all over the country and cost of living in Tehran is significantly higher than in other urban areas; hence it needs its own poverty line.

1. Expenditure: expenditure per capita is one of the dimensions which reflects the welfare situation. An official threshold for expenditure or income which is known as official poverty line (in one-dimensional measure) is not fixed in Iran. However, some studies about poverty were published in Iran, including a study done by the management and planning organization (2000) which calculates poverty lines as the cost of a basket with the minimum intake of 2200 calories per person per day. Another study by Assadzadeh and Paul (2004) begins with food poverty lines for rural and urban areas which are the market values in 1989 of a balanced nutrition diet defined by the Iran institute of Nutrition Sciences and Food Technology, with different sets of prices prevailing in rural and urban areas. They augment these values by the proportion of non-food expenditures at the sample mean for each region rather than, say, at the first quintile, which would be more appropriate for the poor and would also yield a lower poverty threshold. This poverty line which is also used by Slehi-Isfahani (2009) in another study seems to overstate poverty. As in this study I intend to estimate the extreme poverty, I take the threshold that is accepted by World Bank as

the global extreme expenditure poverty line; that threshold is between 1.25\$ to 2\$ per day for each individual and is lower than the above-mentioned thresholds. Hence the study considers the expenditure deprivation threshold of 1.25 \$ per day for the people who live in rural and urban areas excluding Tehran. I decided to consider the expenditure deprivation threshold of 2 \$ per day for Tehran, because \_as already argued\_ cost of living in Tehran is significantly higher than other urban areas; hence it needs its specific poverty line.

In order to work with the available data, the study estimates the amount of 1.25\$ and 2\$ per day for 2007, 2003 and 1999 in Riyals. The exchange rate of dollar to Iranian Riyals is considered the average exchange rate in free market for each year which is a more trustworthy than the official exchange rate in the matter of purchasing power parity for Iranian Rial (Bahmani-Oskooee, 1993).

Another challenge is that the data survey provides expenditure for each household, not for each individual. On the other hand, the threshold of 1.25\$ and 2\$ a day amounts to each individual. Hence we divide the household expenditures to the number of each household's member in order to having expenditure per individual. However, expenditure among households is hardly distributed equally. As there is no real individual expenditure data, the study assumes that expenditure distributes equally among the members of the households. The unit of observation is considered the household. And a household deprived in expenditure dimension, if its expenditure of household divided the number of its members falls under the threshold.

2. Education: another dimension reflecting welfare of an individual is education. The literacy situation can be considered as an index that indicates extreme education deprivation. This dimension consists of two indicators: household head literacy

situation and School attendance of 6 to 16 years old children. Household head literacy situation is not only because such index is the available one, but also it can be a decent one for the numbers of reasons. The head of the household has a very important role in the Iranian culture. The head of the household typically is the person that not only earns the major part of household income, but that also decides about how income is spent. Moreover, the head of the household also decides about the cultural issues and social issues of the household. Therefore, the household's welfare may be affected significantly if the head of the household is completely illiterate or if he or she cannot read, write or count. School attendance of school-aged children is another indicator of this dimension. If in a household there is a child between six to 16 years old who is not attending school, the household deprived in school attendance indicator.

3. Living standard: The standard of living consists of five indicators: accessing electricity and safe water (piped water), enough floor area of housing for each individual, fuel of cooking and asset ownership. Access to electricity and to safe water, are the primary prerequisite of living standards in most references in the literature (for example in MPI index mentioned above). Another dimension of living standard considered by this study is sufficient floor area for each individual. A low value for floor area per person is a sign of overcrowding. Overcrowded housing may have a negative impact on physical and mental health, relations with others as well as children's development. Floor area includes all living space, along with bathrooms, internal corridors and closets. Covered semi-private spaces such as corridors, inner courtyard or verandas should be included in the calculation, if used by household for cooking, eating, sleeping, or other domestic activities. The floor area per person is defined as the median floor area (in square meter) of a housing unit divided by the average

household size. This indicator measures the adequacy of living space in dwelling. Floor area per person does not by itself give a complete picture of living conditions. Cultural values affect sensitivity to crowding as well. According to UNCHS (1996), however, this indicator is more precise and policy sensitive than related indicators, such as persons per room or households per dwelling unit. Putting the threshold for the floor area per person is not an easy task, because there is no fixed standard and it is also affected by cultural values. Hence, regarding its self-realization of the cultural circumstances of the case, the study chooses the threshold of 10m<sup>2</sup> per capita. That means that each household living in a house with the per person floor area less than 10m<sup>2</sup> is deprived in the housing dimension.

Table 2 shows the dimensions and deprivation cutoff the multidimensional poverty in this study.

Table 2. Dimensions, weights and deprivation cut-off the multidimensional poverty

Dimension	Indicator	The deprivation cutoff $z_j$
<b>Expenditure (1/3)</b>	Net expenditure	Living with per capita expenditure below 2 \$ per day for every person in the household.
<b>Education (1/3)</b>	Literacy situation of the household head (1/6)	Having an illiterate household head
	School attendance (1/6)	Having a member of between 6 to 16 years old out of school
<b>Living standard (1/3)</b>	Electricity (1/15)	Accessing electricity
	Safe water (1/15)	Accessing safe water
	Overcrowding (1/15)	Enough (10qm) floor area of housing for each individual
	Fuel of cooking (1/15)	Household cooks with wood, charcoal or dung.
	Asset ownership (1/15)	Household does not own more than one of these items (radio, TV, telephone, bike, motorbike or refrigerators) and does not own a car.

### 3.4. Data

The data which used in this study come from the Household Expenditure and Income Surveys (HEIS) conducted annually by the statistical center of Iran (SCI). These surveys have been conducted since 1963 in the rural areas and since 1968 in the urban areas, but they are available in unit record from 1984 onwards. These surveys are self-weighted and nationally representative household. They are composed of separate rural and urban surveys and are stratified at the provincial level. The number of households to be surveyed in each province is determined based on the province population and variance of the variables of interest in the province. The number of Primary Sampling Units (PSU) in each province is determined by dividing the sample size for the province by 5. PSU's correspond to census tracts, which are chosen randomly, and from each of which five households are randomly selected. Sample sizes vary from 5,759 households in 1986 to 31,283 in 2007.

The survey includes the basic demographic and economic characteristics of the households including self-reported income and expenditures collected for some 600 items (expenditure includes the self-produced items by the households which consumed by themselves, e.g. the food produced by farmer households and consumed by themselves). Similar to most household surveys, expenditures are based on a 30- or 365-day recall period, depending on the frequency of purchase. The recall period for food, fuel, and clothing, for example, is for the last 30 days, while the recall period for expenditures on durables, travel, school tuition, etc., are annual.

To implement the AF methodology, tow general forms of cutoffs should be chosen; the deprivation cutoffs  $z_j$  and the poverty cutoff  $k$ . The deprivation cutoffs  $z_j$  have been introduced in the previous section. For the poverty cutoff the study uses the equal weight of the dimensions and  $k = 2$ .

### 3.4.1. Results of Poverty Measurement

The results of the study are presented in three orders. First of all I provide a comparison between results of traditional one-dimensional approach and those of the multi-dimensional approach. Then the changes of poverty profile over time that comprise changes of multidimensional poverty headcount and adjusted multidimensional headcount in tow four-year periods 1999-2003 and 2003-2007 will be presented. Finally, a detailed profile of poverty will be presented; such profiles may be helpful tools for policymakers to better target their measures to subgroup-specific aspects where help is primarily needed.

Table 3 presents the traditional expenditure poverty headcount (the share of population below the expenditure cutoff), and the multidimensional measures  $H$  and  $M_0$ . Column 3 gives the population share in each group while column 5 presents the share of all poor people found in each group identified by the traditional one-dimensional approach. Comparing these two columns, it shows that the incidence of one-dimensional poverty is disproportionately high for the rural population; comparing of column 3 and column 7 (which shows the share of multidimensional poor people in each group) gives even more discrimination for rural population in welfare distribution. Column 9 lists the distribution of deprivations experienced by the poor people in each group. The resulting figures for  $M_0$  further confirm the disproportionate rural contribution to poverty that is evident in this dataset.

Table 3. Profile of Iran poverty by regional groups (k=2) in 2007

2	1	2	3	4	5	6	7	8	9
0	Group	Population	Percentage Contrib.	Expen. Poverty Headcount	Percentage Contrib.	H	Percentage Contrib.	$M_0$	Percentage Contrib.
0	Tehran	1185	3.8 %	0.010	5 %	0.010	5.5 %	0.004	4 %
7	Urban	13833	44.2 %	0.044	22 %	0.033	18 %	0.018	18 %
	Rural	16265	52 %	0.145	73 %	0.140	76.5 %	0.077	78 %
	Total	31283	100%	0.096	100%	0.088	100 %	0.048	100 %

Figure 1 illustrates the difference between traditional expenditure poverty headcount and the multidimensional measures H and Mo. It shows highly inequality between different area of Iran, both in traditional expenditure poverty and multidimensional poverty.

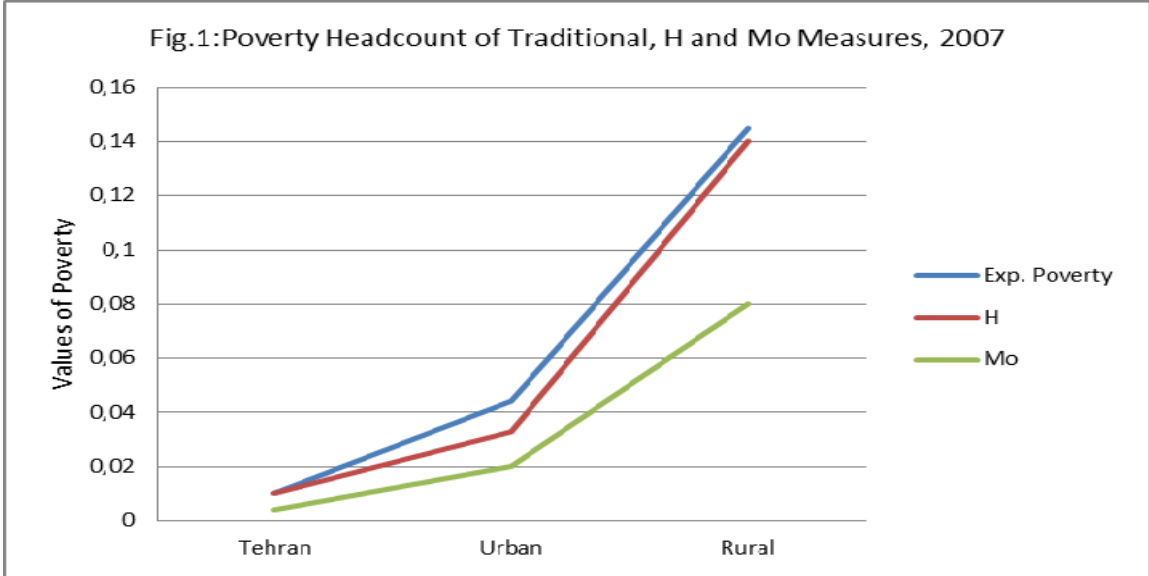


Table 4 gives the values of one-dimensional poverty headcount, multi-dimensional poverty headcount and adjusted multi-dimensional poverty headcount by division in Iran in years 2007, 2003 and 1999. Poverty (both frequency and breadth) has declined overall and in each region over the time. However, the interesting result can be seen in percentage of contribution of poverty in rural area which increased over the time, while the percentage of poverty contribution decreased more in Tehran and less in other urban areas.

Table 4. Profile of Iran poverty by regional groups (k=2) in 1999, 2003 and 2007.

Year	1	2	3	4	5	6	7	8	9
	Group	Population	Percentage Contrib.	Exp. Poverty Headcount	Percentage contrib.	H	Percentage contrib.	M <sub>0</sub>	Percentage contrib.
1999	Tehran	1780	6.5 %	0.515	4.7 %	0.246	3.4 %	0.121	2.8 %
2003		1180	5.1 %	0.077	1.5 %	0.057	1.3 %	0.026	1 %
2007		1185	3.8 %	0.010	0.4 %	0.014	0.6 %	0.006	0.5 %
1999	Urban	10952	39.9 %	0.596	33.8 %	0.343	28.9%	0.179	25.8 %
2003		9779	42.3 %	0.157	23.8 %	0.109	20.7 %	0.058	19.8 %
2007		13833	44.2 %	0.044	20.6 %	0.033	16.7 %	0.018	16.5 %
1999	Rural	14733	53.6 %	0.805	61.5 %	0.598	67.7 %	0.368	71.4 %
2003		12175	52.6 %	0.396	74.7 %	0.33	78 %	0.187	79.2 %
2007		16265	52 %	0.083	45.5 %	0.140	82.7 %	0.077	83 %
1999	Total	27465	100 %	0.703	100 %	0.473	100 %	0.277	100 %
2003		23134	100 %	0.279	100 %	0.223	100 %	0.124	100 %
2007		31283	100 %	0.095	100 %	0.088	100 %	0.048	100 %

Table 5 shows the relative variation in the multidimensional poverty index in 1999-2003 and 2003-2007. It indicates clearly how the pace of poverty alleviation in Tehran, urban areas and rural areas are different. The rate of poverty reduction in rural areas is much less than the speed of poverty reduction in Tehran and other urban areas thus generating a higher gap between rural areas and urban areas over time. In other words, the inequality between regions has become more pronounced. This finding may explain the sensibility of people with respect to inequality and the popularity of pro-poor claims of populists particularly in the rural areas.

Table 5. Relative variation in the Multidimensional poverty index, Headcount ratio and Intensity of poverty by division in Iran, 1999-2003, 2003-2007.

Group	1999-2003		2003-2007	
	$\Delta M_0$ %	$\Delta H$ %	$\Delta M_0$ %	$\Delta H$ %
Tehran	-78%	-77 %	-77%	-75%
Urban	-67%	-68%	-69%	-70%
Rural	-49%	-45%	-59%	-57%
Total	-55%	-53%	-61%	-61%



Figure 2 illustrates table 4 via the methodology was proposed by Apablaza and Yalonetzky (2011). Basically, it illustrate the changes of adjusted headcount  $M_0$  break down to into changes in H, changes in intensity, and changes in an intersection term, when  $\Delta M_0 = \Delta H + \Delta A + \Delta H \cdot \Delta A$ . As it can be seen the most changes in term of poverty alleviation were occurred in Tehran 2003-2007 and Tehran 1999-2003, while the less change related to rural 1999-2003 and then rural 2003-2007. However, it shows the poverty in rural areas in the period 2003-2007 more alleviated in comparison with the period 1999-2003.

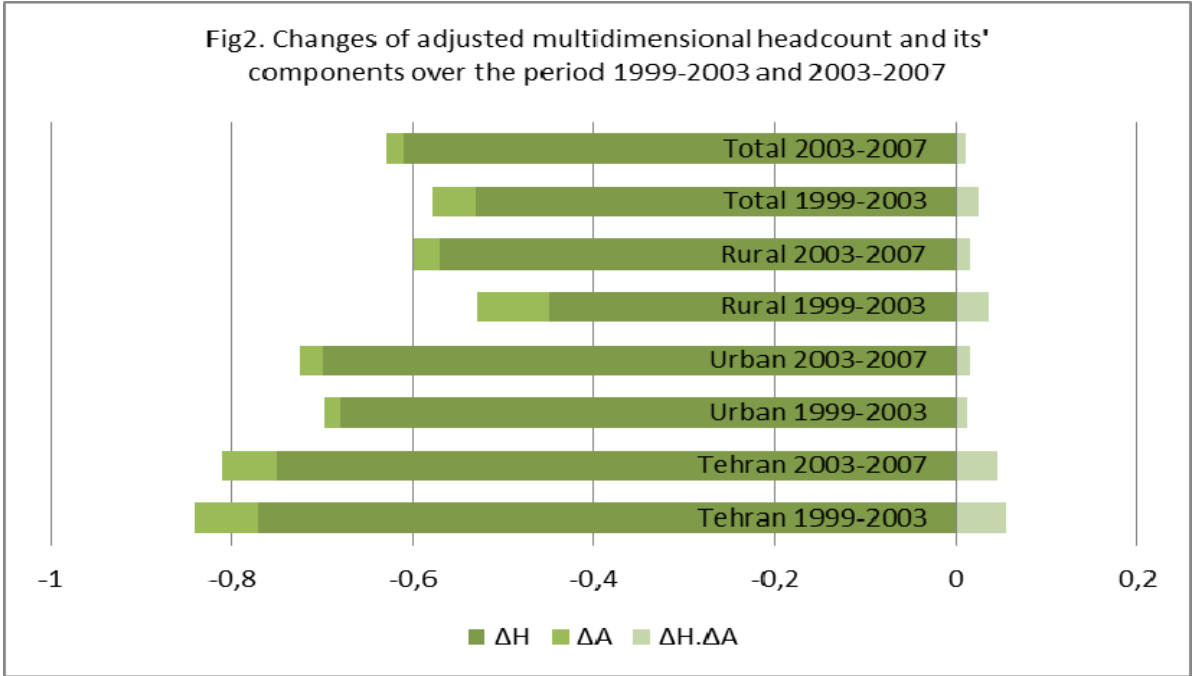


Table 6 shows how the measure  $M_0$  can be broken down by population subgroup and decomposed with respect to expenditure, schooling and living standards to help explain its aggregate level. This may also help to understand the relationship between policies and overall poverty impacts.

Table 6 uses the methodology to identify the percentage contribution of each dimension in adjusted poverty headcount of each region. At first glance, the applied methodology may be

misunderstood in that way that it first aggregates the indices and then breaks it down again to arrive at the same indices. However, that is just a misunderstanding. Basically,  $M_0$  is obtained after applying a process of identification and its value equals aggregate deprivations experienced by the poor as a share of the maximum possible range of deprivations across society. Hence, the indicators are not independent but rely on the joint distribution through the identification step. Therefore, sub-indices derived from breaking down  $M_0$  are reflecting the share of each dimension in impoverishing the poor population of each group.

It helps policymakers to target the contributing dimension in poverty for each subgroup (as mentioned by Alkire and Foster (2011-b), as the useful characteristic of the measure for policy discussions). For example, the results in table 6 show the prominent role of living standards deprivation in poverty in each subgroup and floor area deprivation particularly in Tehran which got worse by the time and it gives importance to housing policy.

Table 6. Contribution of dimensions to group  $M_0$ .

1	2	3	4		5	6	7	8	9	10
Group	Year	Exp. Percentage.	Education		Living Standard Percentage Contrib.					$M_0$
		Contrib.	Literacy of head	School Attendance	Electricity	Tap water	Cooking Fuel	Floor area	Asset	
Tehran	1999	42%	19%	7%	0%	0%	0%	24%	8%	0.121
	2003	39%	14%	6%	0%	0%	0%	30.6%	10.4%	0.026
	2007	29%	16%	13%	0%	3%	0%	35%	3%	0.006
Urban	1999	38%	22.4 %	9.4%	0.1%	1.5%	0%	13.3%	15.2%	0.179
	2003	39.5%	26 %	10%	0.4%	2.4%	0%	17 %	4.7%	0.058
	2007	32%	24.5%	14.5%	0.1%	3%	0%	21%	4.9%	0.018
Rural	1999	31%	22%	13%	2.7%	8%	0.3%	13.5%	9.5%	0.368
	2003	31%	23%	13.5%	2%	9 %	0.3%	13.7%	7.5%	0.187
	2007	26.5%	24.7%	12.3%	2.5 %	9.5%	2.5%	15%	7%	0.077

#### **4. Conclusion**

This paper applied the Alkire-Foster methodology for measuring multidimensional poverty in Iran. This method relies on a counting approach and on Foster-Greer-Thorbecke measures. It was applied to identify the multidimensional poor and to elaborate on the breadth of deprivation experienced by the poor population.

The study focuses on the poverty situation in Iran in 2007, when the economy had enjoyed an eight-year period of income growth, and compares some indicators with the same values in 2003 and 1999 to provide a clear and more accurate image of poverty in Iran. The results of that proceeding display a different picture compared to the traditional one-dimensional poverty measurement. A comparison of the results shows that over the time the value of traditionally measured poverty decreased with a more rapid pace than the decrease in value derived by the multidimensional approach. This means by that the growth rate of income (or expenditure) poverty decreased, while deprivations in other dimensions of poverty were less mitigated.

The results clearly indicate that the rural population suffers desperately on income poverty and multidimensional poverty not only in the form of higher frequency of the poverty, but also by deeper breadth of poverty. Results also show that welfare tends to concentrate more in urban areas, particularly in Tehran, than in rural areas. Finally, they also indicate that during the time span considered in the study the gap between different regions become even larger. As the welfare gap between urban and rural areas plays a significant role in inequality, the result of the paper shows deep inequality in welfare distribution among different areas in Iran. It can also explain why despite of poverty reduction in general, fighting poverty remains the top issue in political debates.

The decomposability quality of this method which allows the index to be broken down by population subgroup to show the characteristics of multidimensional poverty for each groups, is a remarkable property for policy. It shows that poor people in Tehran and other urban areas suffered more from deprivation of expenditure dimension particularly in 1999 and 2003. However, the contribution of expenditure dimension decreased over time, so that poor people in Tehran now suffer more from overcrowded houses. Deprivation of living standard also is an important contributing factor in poverty in rural areas. Obviously policymakers could benefit from the information which is provided by the decomposability feature of the method to target the subgroups in aspects they suffer more.

## References

Alkire, S. (2008). Choosing Dimensions: the Capability Approach and Multidimensional Poverty. *Munich Personal RePEc Archive*, Paper No. 8862.

Alkire, S., and Foster, J.E. (2011-a). Understandings and Misunderstandings of Multidimensional Poverty Measurement. *Journal of Economic Inequality*, 9, 289-314

Alkire, S., and Foster, J.E. (2011-b). Counting and Multidimensional Poverty Measurement. *Journal of Public Economics*, 95, 476-487.

Anand, S., and Sen, A. (1997). Concepts of Human Development and Poverty: a Multidimensional Perspective. Human Development Papers, United Nations Development Programme, New York.

Apablaza, M., and Yalonetzky G. (2011). Measuring the Dynamics of Multiple Deprivations among Children: the Cases of Andhra Pradesh, Ethiopia, Peru and Vietnam, Young Life Research in Progress, Oxford, University of Oxford.

Assadzadeh, A., and Paul, S. (2004). Poverty, Growth, and Redistribution: a Study of Iran. *Rev. Dev. Econ.*, 8(4), 640-53.

Atkinson, A.B., and Bourguignon, F. (1982). The Comparison of Multi- Dimensioned Distributions of Economic Status. *Review of Economic Studies*, 49, 183-201.

Atkinson, A. (2003). Multidimensional Deprivation: Contrasting Social Welfare and Counting Approaches. *Journal of Economic Inequality*, 1, 51–65.

Bahmani-Oskooee, M. (1993). Black Market Exchange Rates versus Official Exchange Rates in Testing Purchasing Power Parity: an Examination of the Iranian Rial. *Applied Economics*, 25, 465-472.

Bourguignon, F., and Chakravarty, S. (2003). The Measurement of Multidimensional poverty. *Journal of economic Inequality*, 1, 25-49.

IMF. (2007). Islamic Republic of Iran: 2006 Article IV Consultatio. IMF Country Report, 07(100), 7.

Klasen, S. (2000). Measuring Poverty and Deprivation in South Africa. *Review of Income and Wealth*, 46(1), 33-58.

Kolm, S. (1977). Multidimensional Egalitarianism. *Quarterly Journal of Economics*, 91, 1-13.

Kuklys, W. (2005). Amartya Sen's Capability Approach: Theoretical Insights and Empirical Applications. Springer Science+Business Media, Germany.

Maasoumi, E. (1999). Multidimensioned Approaches to Welfare Analysis. In Jacques Silber Editor. *Handbook of Income Inequality Measurement*, Kluwer Academic, Boston, Dordrecht and London.

Maroofkhani, A. (2009). Statistical Trends of Iran's Economy (1989 – 2006). *Economical Surveys*, Central Bank of the Islamic Republic of Iran, Sector of Economical Policies Evaluation.

Ravallion, M. (1996). Issues in Measuring and Modeling Poverty. *Economic Journal*. 106, 1328-1343.

Qizilbash, M. (2002). A Note on the Measurement of Poverty and Vulnerability in the South African Context. *Journal of International Development*, 14,757-772.

Salehi-Isfahani, D. (2009). Poverty, Inequality, and Populist Politics in Iran. *Journal of Economic Inequal*, 7,5-28

Sen, A. (1984). The Living Standard. *Oxford Economic Papers*, 36, 74-90.

Sen, A. (2004). Capabilities, Lists, and Public Reason: Continuing the Conversation. *Feminist Economics*, 10( 3).

Streeten, P. (1981). *First Things First: Meeting Basic Human Needs in Developing Countries*. Oxford University Press, New York.

UNCHS/World Bank. (1996). *The Housing Indicators Programme. Report of the Executive Director, Vol. I*. Nairobi.

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