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## **Poverty measurement including in-kind benefits and dwelling**

Prepared by the Israeli Central Bureau of Statistics <sup>1</sup>

### **Abstract**

The measurement of poverty in Israel like the measurement of poverty in the OECD is based on the measurement of money income available to the family and family's size.

In order to present a broader picture of family's economic wellbeing and to show the differences between families, this paper will provide more measurements that shows more resources of income available to families, such as family resources value of services, social transfers in kind and Capital.

The added components to the poverty measurement of money disposable income are:

Income from owned dwelling – imputed on the basis of the rent in other dwellings.

Income from public rent – was calculated by imputing the difference between actual rent paid and the full amount of rent according to average rental rates on the free market.

Social transfers in kind:

1. Health social transfer in kind
2. Education social transfer in kind
3. Welfare social transfer in kind:

Those transfers include in kind government benefits that are taken from administrative files which are the base for the calculations of the national accounts. Those administrative files include records from the Ministry of Education, universities and the Council for Health. Also we have included calculations of the social transfers in kind, reports from the household expenditure survey.

Income from municipal property taxes benefits –calculated by imputing the difference between actual municipal property taxes paid and the full of municipal property taxes according to variables of area and size of dwelling, as obtained from the administrative files of local authorities.

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## 1. Introduction

Poverty is a multi-dimensional social phenomenon affecting people, families and communities in the present and in the future. The poverty measurement accepted by most researchers and social policy makers in the Western world is based on the relative approach.

According to the relative approach, poverty is a phenomenon of relative distress that needs to be assessed in relation to the standard of living that characterizes the society. A family is considered poor when its standard of living, which is measured by its disposable money income, is significantly lower than the standard of living characterized by the society as a whole, and not when it is unable to purchase a basket of basic products. The relative approach recognizes that distress may also be expressed in the level of assets, housing conditions, education, and public services used by those in distress and is not reflected only by low income. There are limitations in measuring poverty according to the relative approach. The limitations stem from the need to translate the standard of living into financial terms, while a considerable part of the services people provide to one another, including services provided by the state, are not measured in money. In other words this is the story of multi-dimensional poverty, to measure poor from all aspects. That's is

Since there is no single way to define multi-dimensional poverty, implementation of poverty measurement varies significantly among developed countries. Since poverty is a global phenomenon, there is a growing demand for the comparison of poverty measurement on an international scale, especially in the context of the 2030 Agenda for Sustainable Development. The poverty measurement manual prepared by UNECE's Task Force on Poverty Measurement has guidelines and recommendations for implementing different poverty measurement approaches to improve international comparison. Among other things, it was recommended at the international level to provide, as far as possible, detailed poverty data according to various indices, such as: age, gender and education of individuals in the household, ethnic background, rural or urban localities, disabilities, occupational status, household type, etc. At the national level - measurement of poverty includes imputation of income from owned dwellings; imputation of income from transfers in kind, subjective poverty, wealth level, and more.

## 2. Objectives of the paper

This paper presents a multi-dimensional poverty index that examines a variety of areas of life that comprise one's well-being. The index is composed of three indices:

- 1) Poverty from disposable income per standard person, the official poverty index published today, hereinafter referred to as (X);
- 2) Poverty from income including imputation of income from housing services per standard person, (Y);
- 3) Poverty from income including imputation of benefits in kind from education and health per standard person, (Z).

The multi-dimensional poverty index is not intended to replace the official index, but to complement it. This paper presents two main products:

- A. The first is an estimate of the poverty rate in each of the three poverty indices (X), (Y), and (Z).
- B. The second is the estimate of the "multi-dimensional" poverty rate, a combined estimate of the three poverty indices: (X), (Y), and (Z).

The poverty data are presented for 2012, at the household level, persons and household types.

### 3. Poverty Measurement in Israel

In Israel, the measurement of poverty is based on the relative approach and is expressed in disposable income per standard person. The poverty measurement is based on three principles:

1. **Disposable income** - the money income of a household that includes gross income from work (self-employed or employee), assets, work pension and support from other households plus transfer payments (payments not in return for economic activity, such as: National Insurance allowances, support from individuals and institutions abroad) and less compulsory taxes (income tax, national insurance contributions and health insurance contributions).
2. **The poverty line** - the level of income equal to 50% of the median disposable income of the population. A household will be considered a poor household when its disposable income is less than half of the median disposable income of the population. An increase in the level of the mean disposable income as a result of economic growth will lead to a higher poverty line, but a household may be considered poor if its disposable income increases in an amount less than the increase of the poverty line.
3. **Adjusting the poverty line to the size of the household** - developing an "equivalence scale" that takes into account the advantages of household size and creates an appropriate basis for comparing the standard of living of households with differing number of persons.

### 4. Data Sources

1. The Household Income and Expenditures Survey of the Israel Central Bureau of Statistics is the main source of data in this paper. This survey is intended to measure the standard of living of the country's population. It measures Israeli households' monthly expenditures on products and services (including ownership of durable goods and housing), as well as individual and household income from all sources. The survey is carried out regularly once per year, and includes approximately 10,000 households and 40,000 individuals in the sample each year.
2. Current Rent Survey conducted within the framework of the Consumer Price Index.
3. Satellite Account for Education
4. Administrative data of the Ministry of Health - Capitation coefficients by age groups and by coefficients of gender and periphery.

### 5. Terms, Definitions and Explanations

**Household:** A group of persons sharing the same dwelling most days of the week, and having a shared food expenditure budget. The unit investigated for measuring poverty is the household in which the income data of all individuals belonging to it are summarized.

**Equivalence scale – a standard person:** The size of a household affects standard of living that can be maintained on a given income. To provide a more appropriate basis for comparing the standard of living among households of different sizes, they are usually classified in terms of per-capita income. It is also commonly assumed that the number of persons in a household does not have a uniform or equal impact on the potential standard of living that can be attained from a given income. This assumption is based on the premise that advantages accrue according to household size. Therefore, the number of persons in a household is weighted according to a uniform scale in which a two-person household is the base unit. The larger the number of persons in the household, the lower the marginal value assigned to each additional person in the household. Based on this scale, household size is expressed in terms of standard persons.

The full scale is shown in the following table:

Actual number of persons in household	Number of standard persons	Marginal weight per person
1 person	1.25	1.25
2 persons	2.00	0.75
3 persons	2.65	0.65
4 persons	3.20	0.55
5 persons	3.75	0.55
6 persons	4.25	0.50
7 persons	4.75	0.50
8 persons	5.20	0.45
9 persons	5.60	0.40
Every additional person		0.40

**Imputation of housing services** - income from consumption of housing services in owned dwellings by imputation of alternative rent in dwellings of the same size in those localities or similar areas in Israel. The imputed data on rentals in 2012 were obtained from three sources:

- 1) The current survey of rentals, which conducted within the framework of the Consumer Price Index.
- 2) Rental data on households living in rented dwellings, from the Household Expenditure Survey itself.
- 3) Outside sources.

**Imputation of benefits in kind** - the value of production of services provided to households for free by an employer or by the government, such as compulsory education services. In calculating the poverty index in this study, the value of education services and health services was calculated as follows:

1. **Education** - distribution of total transfers in kind per pupil by the level of education, and then combining data with micro data from the Household Expenditure Survey according to the number of pupils and the level of education reported by the household.
2. **Health** - combining data obtained on capitation coefficients by age groups, coefficients of gender and periphery.

## 6. Main Findings

### 6a. Incidence of poverty in households, by type of poverty index: index (X-disposable income), index (Y-income and dwelling) and index (Z-income and in kind benefits)

In the measurement of poverty according to the (X) index, 19.4% of all households in Israel live below the poverty line, 33.7% of children<sup>2</sup> and 23.6% of the elderly.<sup>3</sup>

In the measurement of poverty according to the (Y) index, 17.6% of the households live below the poverty line, 32.7% of children, and 15.6% of the elderly. When comparing the data according to the two types of indices, it was found that according to the (Y) index, a small percentage of households (1.8%) and of children (1%) were lifted from poverty. Among the elderly, most of whom (77.5%) live in an owned dwelling - a higher percentage is lifted from poverty - 8%.

In the measurement of poverty according to the Z index, 10.1% of households are under the poverty line, 12.6% of children, and 10.3% of the elderly. In comparison to the data obtained by the (X) index,

<sup>2</sup> Children – defined as those up to age 17, inclusive.

<sup>3</sup> Elderly – defined as those over age 64.

in all the parameters there is a decline in the incidence of poverty. The highest decline is found among children who are the largest beneficiaries of government benefits from education.

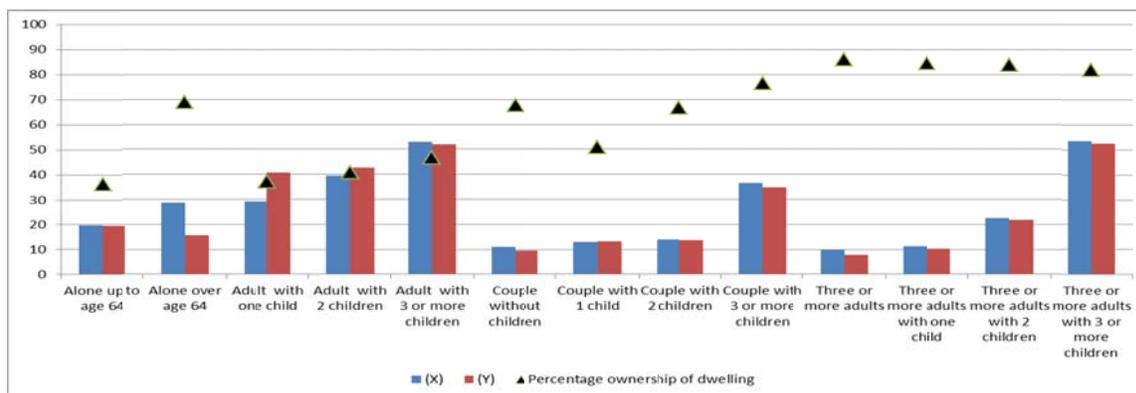
**1. Percentage of Poverty in Households, Persons, Children and the Elderly, by Type of**

**Poverty Index – 2012**

	Index (X)	Index (Y)	Index (Z)
Households	19.4	17.6	10.1
Persons	23.5	22.2	10.7
Children	33.7	32.7	12.6
Eldery	23.6	15.6	10.3

When examining the data on poverty by type of household, it can be seen that in all household types, with the exception of the type of household of a single parent with one or two children, the poverty rate according to the (Y) index versus the poverty rate according to the (X) index decreased. The highest decline was found in the household type of single adults over age 64. As noted, among household type of a single adult with a child, there was an increase in the percentage of poor households. The reason lies in the low percentage of ownership of a dwelling (37.1% among these households).

**2. Poverty Rate and Dwelling Ownership, by Type of Poverty Index and Household Type, percentages 2012**

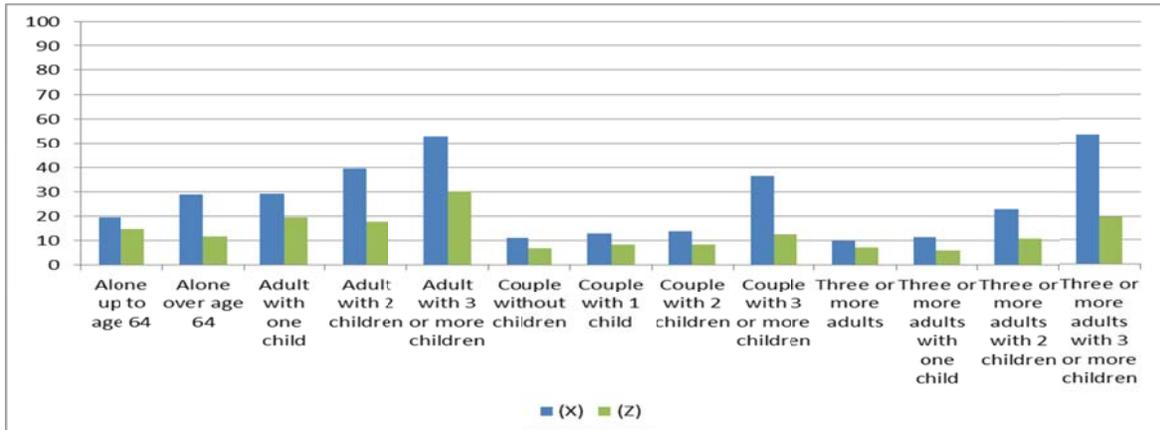


When comparing between the (Z) index and the (X) index, it can be seen that the poverty rate according to the (Z) index, compared with that according to the (X) index, decreased in all types of households. A high decline was found in the (Z) index in the rate of poverty among large households, in which there are three or more children. The reason for this is that the imputation of income from benefits in kind from education services is higher because of the large number of children in these households.

A high decline was also found in households of single individuals aged 65 and over. The decrease stems from a high proportion of transfers in kind from health services. As age increases, the total amount of transfers in kind for health services on average per person increases. Therefore, when comparing between households with a single person aged 65-74 and those with a single person aged 75 and over, the rate of those lifted from poverty is higher in the older age group (10.8% and 28.8%, respectively).

The lowest decline in the poverty rate – 2.5% – was found in households of three or more adults without children. In these households, the benefit from the allocation of benefits in kind is low in both aspects – from educational services, because children are the main beneficiaries of benefits in education, and from health services, because the persons in the household belong to the ages in which the health benefits are low.

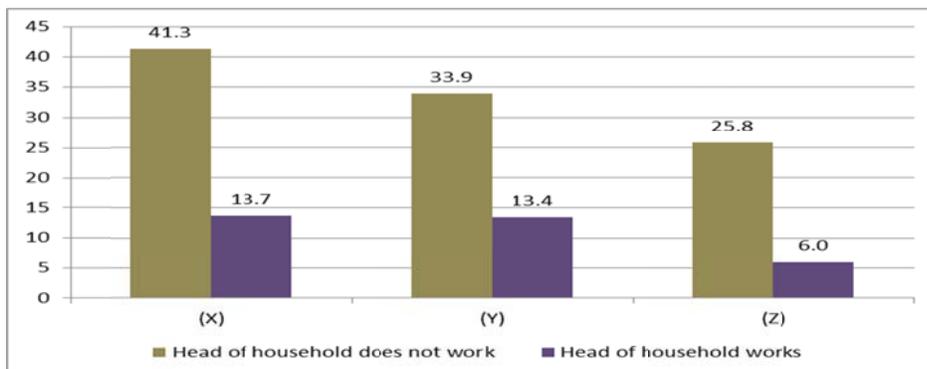
### 3. Poverty Rate, by Type of Poverty Index and Household Type, percentages 2012



When comparing between households in which the head of the household works and those in which the head of household does not work, the rate of poverty in households in which the head of household does not work is more than double in all three poverty indices than in households in which the head of the household works.

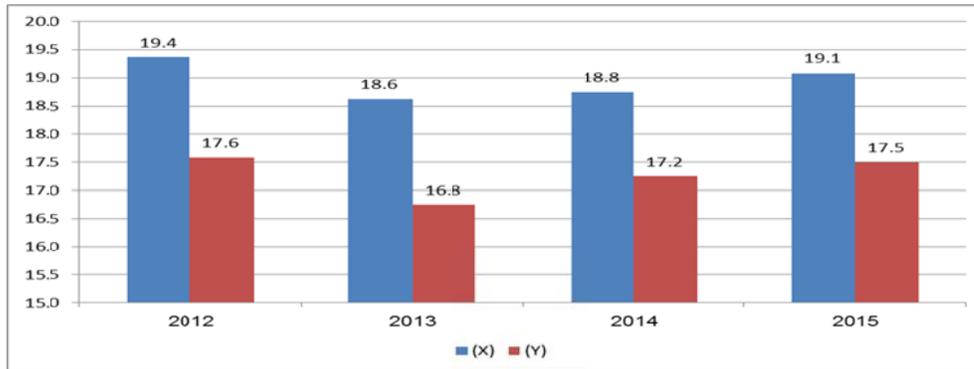
In comparison to the index (X), in households where the head of household does not work, there is a decrease of 7.4% in the poverty rate according to the (Y) index and a decrease of 15.5% according to the (Z) poverty index. By comparison, in households where the head of the household works, there are small differences in poverty rate between the (X) poverty index and the (Y) poverty index, a difference of 0.3%. A large decrease of about 20% was found in the poverty rate according to the (Z) index versus the (X) index.

### 4. Rate of Monthly Income and Benefits in Kind by Employment Status of Head of Household, percentages 2012



An examination of poverty in households according to the (Y) index compared to the (X) index in 2012 shows a decrease in the poverty rate of 1.8% in households, 1.3% in persons and 1% in children. An examination of the poverty rate over the years also found the same trend.

#### 5. Poverty Rate According to the X (disposable income) Poverty Index and the Y (income and dwelling) Poverty Index for 2012-2015

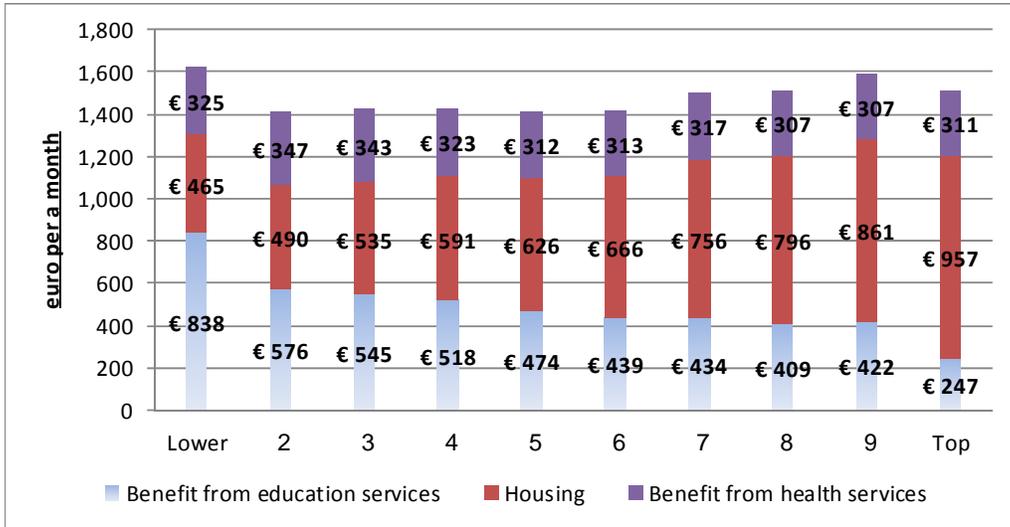


#### 6b. Composition of Net Income per Household, by Deciles of Net Income per Standard Person

The distribution of all households by deciles shows that the higher the decile, the lower the average number of children. In the lower decile, the average number of children stands at 2.5, compared to the upper decile with an average of 0.4 children.

The data in diagram 6 show the average income per household from the imputation of benefits in kind according to the components: education and health, and imputed income from housing owned. The lower the decile of the household, the higher the benefit of education, since households in the lower deciles have more children. On the other hand, the imputation of income from housing is lower, because the value of the owned dwelling is low in the lower deciles. In the lowest decile the value of the owned apartment is almost three times lower than in the upper decile.

#### 6. Rate of Monthly Income Per Household From Benefits In Kind from Education and Health, by Deciles of Net Money Income per Standard Person, 2012



When examining the composition of income that includes imputations, it was found that about half was disposable income, 23% was for housing services, and 28% was for benefits in kind. When examining according to deciles, it was found that the lower the decile in which the household was found, the higher the percentage of income from imputations. In the lowest decile, about half of the monthly income comes from benefits in kind, compared with about 6% in the upper decile. Although the value of owned dwellings in the lower deciles is lower than in the upper deciles, the percentage of income from imputed housing services in the lower deciles is higher.

**7. Rate of Monthly Income per Household from Disposable Income, Imputation of Housing and STIK, by Deciles of Net Money Income per Standard Person,**

**2012**



**6c. Multi-Dimensional Poverty**

The multidimensional poverty index includes households that are below the poverty line in each of the three indices: (X), (Y), and (Z). As mentioned before, **X** represents poverty from disposable income per standard person, the official poverty index published today; **Y** represents poverty from income

including imputation of income from housing services per standard person; **Z** represents poverty from income including imputation of benefits in kind from education and health per standard person.

In comparison to the data obtained by the (X) index, the official poverty index in Israel, the number of poor persons according to the multi-dimensional index, which includes imputations, decreases in all the parameters: households, persons, children and the elderly. The highest decrease is found among children, who are the main beneficiaries of the benefits in kind from educational services, and among the elderly as well, who enjoy both benefits in kind from health services as well as imputations of housing services.

The depth of poverty in the multi-dimensional index (the distance between average disposable income and the official poverty line income) is very high and stands at 50%. Therefore, these households do not lifted from poverty even after the imputation of benefits.

#### 8. Cross section compression of Type Poverty Index

	Index (X)	Index (Y)	Index (Z)
<b>Poverty Rate</b>	<b>19.4%</b>	<b>17.6%</b>	<b>10.1%</b>
	<b>Percentages</b>		
<b>Total poor persons</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>
Of those:			
<b>Excluding households found in the multidimensional index</b>	60.9	57.0	25.0
<b>Households found in the multidimensional index</b>	39.1	43.0	75.0

When examining the poverty data according to the indices (X), (Y) and (Z), and subtracting from them the poor households found in "multidimensional" poverty, as shown in table 8, the following data arise:

- The percentage of poor in the (Z) index is the smallest - 25%. This indicates that welfare policies and subsidies from the state are the main source of lifting them from poverty.
- In the (Y) index, the percentage of the poor that is excluded from the multidimensional poverty is slightly lower than the percentage of the poor in the (X) index – 57% compared with 60.9%, respectively. This indicates that the allocation of benefits from housing services lifts fewer households from poverty, because the average value of the dwelling of poor households is lower than that of other households.

Eventually the conclusion is that index Z which refers poverty from income including imputation of benefits in kind from education and health, is the most appropriate indicator to represent the poor from the multidimensional aspect.

## **7. Further Work on Multi-Dimensional Poverty in Israel**

1. Adding data sources to the measure such as the Social Survey.
2. Building a new central database that will enable the publication of data on an annual basis on data on transfers in kind in the fields of education and health and imputation of housing services.
3. Include benefits in kind for welfare services in the multidimensional index.
4. Examination of additional segmentations in the individual and household levels that were not examined in this study, such as education.