# HOUSEHOLD BUDGET SURVEY, A KEY ISSUE OF ALBANIAN STATISTICAL SYSTEM

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**Abstract**
Household Budget Survey, is one of the most important surveys held in a country. Considering its importance, especially in calculating the Consumer price Idex and Dross Doemstic Product, the perspective of the paper is to catch the issue from the root Promoting a moderated public debate based on scientific research, which would help politics in undertaking an efficient socio-economic policy, it is needed a integrated and harmonised household buidget survey. The aim of the paper is to study the existing methodology undertaken by Albanian Institute of Statistics and to compare it with the methodology used by Eurostat, in order to have a perfect statsitical panorama for an albanian household , which will help for a further efficient socio-economic policy incentive in the country. Establishing a Household budget survey comparable with the one in Euroepan Union, will help in etsablishing an integrated socio-economic orientation of Albania with other countriws of European Union. First part of the paper presents the main findings of methodological issues followed by European countries. Second part of the paper presents the methodology generated by Albanian Institute of Statistics and the third part generates main results of Household budget survey 2014 for Albanian case. The finding of the paper will help on directives for improvement of the methodological aspects of Household budget Survey for Albania and will empirically prove the importance of a such survey in socio-economic development of the country.

**Keywords**
Household, Budget, Survey, Income, Expenditures, Data, Indicator

**JEL Classification**
R2, H31, O15, P4, J1,

## Introduction

Household Budget Surveys (HBSs) are national surveys, almost organized yearly by each country in order to mainly measure the consumption expenditure and their primary aim is to

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calculate weights for the Consumer Price Index, as well as final consumption calculation of households are an important aggregate of Gross Domestic Product (GDP) ( HBS , Albania, 2014) by the expenditure method. Even though there have been continuous efforts to harmonize the methodology, the questionnaire and the interpretation still there remains some difference among countries.

These survey programs cover all kind and amount of income and expenditures (for goods and services) of private households in great level of detail by means of household books (diaries). Some other aspects of a household daily life are considered, suc as composition, participation in labor force, housing conditions, mobility, equipment with durable goods etc. as well as information on socio-economic status and demography.

Considering a general panorama od a household, the HBs offer a unique potential to investigate socio-economic inequality, especially in a comparative national perspective.

The surveys vary between countries in terms of frequency, timing, content or structure, even the methodology sometimes is not harmonized and it makes it difficult for comparison. Harmonizing the above mentioned items among countries in Europe is a challenge per each national statistical system.

The first part of the paper is focused on a detailed analyze of HBs in European countries, trying to identify the problems, the ways where there is a need for improvement and future challenges. While the second part of the paper is a short description of a situation of HBs in Albanian context, which are the main achievements and some challenges, this kind of statistics has to meet in the near future. The methodology is another issue considered in the paper and what has to be done so far to catch up with Eurostat (Eurostat, 2012) directives. A detailed statistical analyze of the latest HBs carried in Albania is conducted and some conclusions are framed within this perspective.

## 1. Main issues of household Budget Survey in European countries.

A Household Budget Survey is a sample survey of thousands of households that are asked to keep records of their expenditures on different kinds of consumer goods and services over a specified period of time. The size of the sample obviously depends on the resources available, but also on the extent to which it is desired to break down the survey results by region or type of household. An HBS may be taken at specified intervals of time, such as every five years, or it may be taken each year on a continuing basis. The HBs is administered by National Office of Statistics of a country.

All countries try to have qualitative HBs, and this is achieved considering 6 pillars:

1. ***Relevance***: refers to the extent to which the HBS is useful to, and used by, users. It has to do with the fact that all statistics that are needed are produced and the extent to which concepts used (definitions, classifications etc.) reflect user needs. Data of HBs should be relevant for all users or group of users i . e: ministries, public administration, universities, researchers, private firms and consultants, general public, European Union 9 EU) institutions, ect .
2. ***Accuracy:*** refers to sampling process. Like in any sample survey, the statistics generated from the HBS data may be liable to errors which are inherent in the survey method used.

*Design* is an important issue. The surveys in most countries are based on probability sampling by design. The majority of the countries draw a sample of households in a way that the probability of a household being selected is known (technically known as a probability design). In this way, the results can be reliably projected from the sample to the

household reference population with known levels of precision, i.e. standard errors and confidence intervals for survey estimates can be constructed. On the other hand, non-probability schemes (e.g. Quota selection) are implemented in the Czech Republic and Germany. Generally this type of sampling is quicker and cheaper, but there is no assurance that the selection of households is not biased and is representative of the whole population.
When choosing the sample it has to be decided which will be the unit of sampling: the addresses (which means that all the private households currently residing at a selected address are eligible) or persons (which normally includes all members of the household the sampled person belongs to).
Moreover, many of the samples were stratified by *geographical dimensions*. This improves the representatively of the samples by ensuring a minimum adequate size by region.
The HBS data are *weighted* (sample weight to correct for imperfections among sample and reference population, and design weights refers to the inverse of probability of selection).
Non-response (some households, which are initially chosen, do not take part in the survey) decrease the accuracy of the HBs, and this is corrected by design weights, which refers to the household response probabilities.
*A classical typology of survey errors makes the distinction between sampling and non-sampling errors.*
*2.1 Sampling errors:* arise from estimating a population characteristic by looking at only one portion of the population rather than the entire population. The size of the sampling errors depends on the sample size: the higher the sample size, the higher the accuracy. The effective sample size can be even smaller as a result of the way the sample has been designed.
*2.2 Non-sampling errors*: encompass all the other types of errors (e.g. coverage errors, measurement errors ect. Coverage errors also come up at the sample selection stage; except for the Czech Republic and Germany (which resort to quota sampling) all the HBS samples were selected according to a probability sampling scheme. In probability designs should be a one-to-one relation between the units which are recorded in a sampling frame and the units of the target population. However, such an ideal situation rarely happens: there are usually units in the sampling frame which do not belong to the target population (*over-coverage*) and units in the target population which are not listed in the frame (*under-coverage*). Under coverage can cause bias in the estimates, especially if the units which are not covered have specific survey characteristics (e.g. specific consumption patterns).
The common feature of all the HBSs is that households are asked to maintain detailed diaries of expenditure over a fixed time period (two weeks in most countries). This is not very comfortable for the households, resulting in higher non-response rates reported for the HBS than for other surveys. Overall, the reasons for a household not to participate are quite diverse: the household may happen to be temporarily absent or may refuse to provide such sensitive data; the interviewee may be unable to participate due to illness, language problems, etc. Non-response is a source of bias in sample estimates, particularly if the non-respondents have specific characteristics. Besides, non-response makes the achieved sample size lower, thus making the data less accurate. The following table 1 presents the household response rates in some EU countries.

**Table 1: Household response rate**

| Country | % |
|---|---|
| Austria | 38.1 |
| Belgium | 5.6 |
| Bulgaria | 52.6 |
| Croatia | 62.7 |
| Cyprus | 76.4 |
| Czech Republic | Unknown (*) |
| Denmark | 42.3 |
| Estonia | 49.0 |
| Finland | 43.1 |
| France | 68.7 |
| Germany | Unknown (*) |
| Greece | **68.6** |
| Hungary | 45.5 |
| Ireland | 39.7 |
| Italy | 80.9 |

*Source: Eurostat 2010*

The HBS also includes household interviews which are generally conducted before and after the period of diary recording: they aim to collect basic information on the selected households and on their members.

Sometimes, the lack of uniformity in sampling methods and methodology has made the analysis of accuracy impossible at European level.

***3. Timeliness and Punctuality****:* Timeline refers to the frequency and the year that the survey was carried out in the countries. In almost every country in EU the HBs is carried out annually, in Albania it is carried out once in a five year, but beginning in 2016, it will be in annual frequency. Punctuality refers to the period from the survey reference year to the date of publication of the HBS data, the shorter this period, the better it is. The HBS 2010 data tables were disseminated on Eurostat's website during September 2014 and Eurostat observes that some improvement could clearly be made to shorten the period between the reference year and the publication date many countries did not follow the transmission format requirements issued by Eurostat and this led to considerable delays in processing and publishing the data.

***4. Accessibility and Clarity:*** has to do with the forms of gathering and dissemination of data from HBs. Eurostat gets the results (a prior list of definitions and variables has been transmitted to the national statistics offices) from each country HBs from their National Institute of Statistics via eDamis, Eurostat's secure network for transmission of data. Validation tests are carried out and a validation report generated. After being validated, the harmonized HBs micro-data is stored in a set of Oracle Tables within the data base of HBs of Eurostat which is used as the source used to build the Eurobase Tables, Anonymised Datasets for researchers and also for Ad-hoc requests.

***5. Comparability***: refers to the differences between the true values and the statistical characteristics. This can only be carried out under a premise of common concepts, definitions and classifications. Comparability between different data sets implies that the data measure the "same thing". Considering this as a measure of quality, comparability and

accuracy are different things, even though an 'adequate' level of accuracy is essential for comparability.

*5.1 Definitions and basic concepts*: refers to a common understanding on concepts used in each HBs country, in order for allowing them to be comparable. For example: The basic unit of data collection and analysis in an HBS is the *household*. The definition used in an HBS is more complex than a group of people who are living together "under the same roof": a household is a social unit which meets one or more conditions of "living together" in addition to sharing a common accommodation. Countries differ in the exact rules applied for this purpose as well as the operational meaning given to the four criteria noted above. Many countries mention, though, as general criteria, that a potential member is included in the household if there are economic links between the person and the household The concept of the "household reference person" is central in the EU HBS in the sense that it constitutes a socio-economic classification of households according to the profile of a member who is supposed to be "representative".

"Final consumption expenditure*"* is the expenditure incurred by households on individual consumption goods and services. Household final consumption expenditure has a monetary and a non-monetary part. The actual final consumption of households is derived from their final consumption expenditure by adding the value of social transfers-in-kind received from the government (such as expenditures on Health & Education) and non-profit institutions serving households.

According to the European System of Accounts (ESA) , which is the reference for the HBS, the purchase of a dwelling as such is regarded primarily as capital formation (investment) and not consumption expenditure. However, the ownership of a dwelling is considered to produce a service – a shelter, which is actually consumed over time by the households. As a consequence, ESA requires the estimation of the price of the shelter, by imputation of a rent, since no monetary transaction is involved. This imputed rent is part of household consumption expenditure. Different methods can be used in order to estimate imputed rent. The choice of method generally depends on the size and the structure of the national rental housing market. Countries such as United Kingdom, the Czech Republic and the Former Yugoslav Republic of Macedonia have not imputed any rent for the use of owner-occupied dwellings as household main residence:

*5.2 Other potential sources of non-comparability* such as: different HBs reference years (which means that for countries which do not undertake it yearly, their respective household level price coefficients have to adjust expenditure and Income in order to make them comparable) and different survey instruments (there are some variations in the survey instruments: many countries use household diaries, while others complement household diaries with individual ones in order to get more accurate information. The recording period varies between the countries from one week to one month as Chez Republic, one week as France and Italy but two weeks being the most common

***6. Coherence***: refers to that characteristic of statistics, of being able to measure the adequacy of the data to be reliably combined in different ways and for various uses. Coherence means that different sources together lead to a consistent picture, with each making a contribution towards the development of the picture. In the case of the HBs, the most relevant sources for external comparison include the Weights used in the Harmonized Index of Consumer Prices (HICP), the Statistics on Income and Living Conditions (SILC), Labor Force Surveys (LFS), National Accounts (NA) and various administrative and other sources depending on the country. For example, lets refer to EU- SILC indicator: *Gini*

*coefficient:* This is the relationship between cumulative shares of the population arranged according to the level of income and the cumulative share of total income received by them. A Gini coefficient of 0% means perfect equality and of 100% shows a total inequality. It can be measured by equation 1: where *Ri is* the rank of *i* in the population arranged according to the level of income. If income data are collected from a sample *s* of the reference population, the Gini coefficient can be estimated by equation 2, where w*i* is the sample weight of household *i* and $W_i$ is the cumulated weight of *i* (in the population arranged according to the level of income):

$$1+Gini=\frac{2\sum_i R_i \cdot INC_i - \sum_i INC_i}{\left(\sum_i 1\right)\cdot\left(\sum_i INC_i\right)} \quad (1)$$

$$1+\hat{Gini}=\frac{2\cdot\sum_{i\in s}\left[\left(W_i-\frac{\omega_i-1}{2}\right)-1\right]\cdot\omega_i\cdot INC_i}{\left(\sum_{i\in s}\omega_i\right)\cdot\left(\sum_{i\in s}\omega_i\cdot INC_i\right)} \quad (2)$$

In order to judge about the coherence of EU- HBs and EUSILC, than Gini coefficient can be calculated by two above mentioned formulas, substituting the values of 5 indicators from HBs micro data country tables and their respective SILC. In order to increase comparability, the EUSILC methodology can be used:

- The HBS database can be turned into an individual one by replicating the household records according to the household size (per capita)
- For each household, the household net monetary income can be divided by the "equivalised" household size and the result can be given to each household member as an estimate of the "personal" income.
- The indicators can be calculated at individual level using this "personal" income as well as the household sample weights.

Still, we have to keep in mind that these two surveys are from different samples with different sample sizes. There are inherent methodological differences between the two instruments: EU-SILC has been designed to be the reference source of income data at EU level, while HBs rather focuses on household consumption expenditures and provides less information on income, mainly for categorical purposes.

## 2. Methodology of Household Budget Survey in Albania

The first time when the HBs is conducted in Albania was in 1999-2000 (representative only for urban areas), followed by others in 2006-2007, 2008-2009, 2014 and hopefully it isgoing to be in annual periodicity. Since 2006-2007, the survey has covered all the Albanian territory (urban and rural area). In 2014, the sample of 7,836 households and in 2006-2007 , the sample used to be of 5, 600 household, with the households' response rate (calculated as the ratio of the number of interviewed households with the number of selected households) of 83.8 percent and 94.4percent respectively for the HBs of 2014 and 2006-2007. The sample selection follows a two-step procedure. During the first step, there have been identified and then selected the Census homogeneous areas (Census area has the

same characteristics of households' consumption expenditures and the size of each PSU has almost the same number of households or individuals) with a proportional probability to the size of the Census area. Going through a second step of sampling, which uses the method of systematic selection, due to which within each selected area in the first step, it is selected by with equal probability a fixed number of 12 households. The selection in both steps is done in a random way by providing a representation also at the prefecture level. The total households sample was divided into 4 sub-samples of three months which were geographically spread homogeneously throughout the year, to reflect the seasonal changes. Consequently, each month were interviewed about 547 households spread evenly in all selected areas so to ensure representativeness for each area each month of the year.

Two different ways of collection data are used: (1) A selected household has to fill a dairy for a period of 14 days. The diary consists of expenditures for purchasing products/services of consumption and when it was necessary filling a daily self-consumption dairy for 14 days, where are recorded only the products produced and consumed by the household itself during the same period (the values are estimated with the price that would be paid in the nearest shop/market) (2) Face to face interview. This is done through a questionnaire, divided in chapters according to specific topics, including: socio-demographic data of household as well as questions about expenditures.

Each survey conducted by INSTAT is based on a sample selection to draw conclusions about the population observed. Normally, this process is accompanied by statistical deviations. In this perspective, there are calculated the HBs 2014"s standard deviations and coefficient of variation of the average monthly consumption expenditure by the 12 main groups of consumption and the average monthly consumption expenditure by prefecture.

The idea is , the lower the standard deviation , the higher is the level of accuracy of that estimate. The lowest standart deviation is for the "Communication" (34) ( INSTAT, 2015) and the highest it is for the "Education" (282). The highest coefficient of variation is for "Education" ( 9.7% more heterogeneius) and the lowest is for "Food and non-alcoholic beverages" (0.8%- more homogeneius). Evaluation of stadart deviaation and the average helps to establisht the interval of estimation for the value of population for the repective parametr. So, if the estimation obtained for the group is 30,745 ALL (Albanian currency: leke) then the standard deviation for this value is 261 ALL. Combining the estimation received from the survey for the expenses made for this group by the respective standard deviation it is correct to say that with a 95 percent of confidence interval that the estimation of expenditure for the group "Food and non-alcoholic beverages" is from 30,233 ALL to 31,257 ALL.

Under the above notations, the (absolute) standard error of the mean consumption expenditure $\hat{\bar{Y}}$ , is estimated by the square root of the estimated variance $\hat{Var}(\hat{\bar{Y}})$ the latter being given by:

$$\hat{Var}\left(\hat{\bar{Y}}\right) = \frac{1}{\hat{N}^2}\frac{1}{n(n-1)}\sum_{i\in s}\left(n\omega_i y_i - \sum_{k\in s}\omega_k y_k\right)^2 \qquad (3)$$

Where $n$ is the achieved household sample size and $\hat{N}$ is the estimated size of the household population. The relative standard error (or Coefficient of Variation - CV) is estimated by:

$$\hat{CV}\left(\hat{\bar{Y}}\right) = 100 \times \frac{\sqrt{\hat{Var}\left(\hat{\bar{Y}}\right)}}{\hat{\bar{Y}}} \qquad (4)$$

In order to obtain a confidence interval for the mean consumption expenditure, it is assumed the statistic follows a normal distribution. Under the same notations as above, a 95% confidence interval is given by:

$$CI(\overline{Y}) = \left[ \hat{\overline{Y}} - 1.96 \cdot \sqrt{Vâr\left(\hat{\overline{Y}}\right)} ; \hat{\overline{Y}} + 1.96 \cdot \sqrt{Vâr\left(\hat{\overline{Y}}\right)} \right] \quad (5)$$

**3. Main findings of Albanian Household Budget Surveys (2006-2007-2014)**

Going through a detailed analyze of HBs in Albanian case for the period of 2006, 2006, 2007, 2009 and 2014, we can find, that the estimated average monthly consumption expenditures of households in 2014 was 5.6 percent higher compared with 2009 (INSTAT, 2015), while the estimated average monthly consumption expenditures of households in 2009, compared with 2007 was 5.2 percent lower. According to the Consumer Price Index, the cumulative increase of prices, in the period 2009/ 2006, was 7.2 percent while for the period 2014/ 2008 was 15.5 percent.

Comparing of the average monthly consumption expenditure in 2014 and 2009 there is a decrease in the share of households budget for "Food and non-alcoholic beverages" of 5.3 percent. An even more significant decrease has had the share of "Alcoholic beverages and tobacco", by 9.9 percent, while the group with the most significant decrease of the share of total expenditures is "Restaurants and hotels", by 33.4 percent. The groups that have recorded the highest increase on the consumption expenditures are "Education" with 118.6 percent and "Health" by 85.2 percent. Other groups for which the consumption expenditures have increased are "Recreation and culture" by 43.2 percent, "Transport" by 25.5 percent, "Housing, water electricity, gas and other fuels" by 19.3 percent, "Furnishing, household equipment and routine maintenance of the dwelling" by 17.3 percent.

Comparing the average monthly consumption expenditure of households in 2009 with the one of 2007, it is 5.2 percent lower.

Referring to the HBs 2014, the average monthly consumption expenditures are estimated to be about 69 thousand ALL taking into account that a household is composed by 3.8 persons on average. In 2014, the total amount of monthly consumption expenditures of households from the survey is estimated at about 52, 6 billion ALL, where the number of Albanian households in the same year is estimated at about 758 thousand. Considering the per capita monthly consumption expenditures in the one year period of the survey, an individual in Albania spends on average about 18 thousand ALL, of which 8 thousand ALL are spend for food and 10 thousand for non-food consumption.

Referring to the HBs, 2007, we can find that the total monthly consumption expenditure for the total of households was about 52 billion ALL. In 2007, the number of households in Albania was estimated around 752 thousand. The average consumption expenditure of "Food and non-alcoholic beverages", "Alcoholic beverages and tobacco" and "Restaurants and hotels" groups decreased also during the period 2007-2009 like in the previous one, with 1.6 percent, 9.0 percent and 4.8 percent respectively. But the amplitude of decrease is lower not only for "Food and non-alcoholic beverages" group but also for "Restaurants and hotels". A considerable decrease during this period has had the expenditures for "Health" by 36.7 percent, "Recreation and culture" by 29.5 percent, "Furnishing, household equipment and routine maintenance of the dwelling" by 21.2 percent and "Clothing and footwear" by 17.3 percent. The groups for which the consumption expenditures have

increased are “Housing, water electricity, gas and other fuels” by 16.3 percent, “Communication” by 13.0 percent and “Education” by 11.4 percent.

If we take a look at the average consumption expenditures by prefectures we can notice that they vary over the years expressing different trends of their rank by the consumption expenditure amount. The prefecture of Tirane has the highest average consumption expenditure in 2014 as well as in 2007, but in 2009 it ranked third behind the prefecture of Gjirokastër and Fier. In 2014, the prefecture of Lezhe and Shkoder has the highest average consumption expenditure while in 2007, are the prefecture of Durres and Gjirokaster after the prefecture of Tirane that lead with the highest average consumption expenditure. When discussing about the prefectures with the lowest average consumption expenditure in years they also differ: while the prefecture of Berat, Kukes and Diber in the first two surveys ranked among the prefectures with the lowest average consumption expenditure, in 2014 they changed their position and were ranking higher, leaving the place to the prefecture of Elbasan and Vlore.

The average consumption expenditures measured by deciles show that in 2014, the average consumption expenditure has had a slightly increase compared with 2009, not only for the tenth deciles that represent the households with the highest consumption expenditures, but also for the 90 percent of the rest of the households The deciles ratios for this indicator appear similar among the three surveys.

**Conclusions**

The main focus of a Household Budget survey is Consumption Expenditure, which is the activity in which persons; acting either individually or collectively, uses goods or services to satisfy their needs and wants. A household’s economic well-being can be expressed in terms of its access to goods and services. The more that can be consumed, the higher the level of economic wellbeing, though the relationship between the two is not a linear one. Measuring consumption expenditure might therefore be a way of measuring economic wellbeing. Studies of consumption investigate how and why society and individuals consume goods and services, and how this affects society and human relationships. This is why the HBs is very important in national context and a very good tool to make real comparisons among countries. Considering other EU countries experience in HBS, there is a room for improvements in accuracy and comparatibility. This means that harmonized and integrated HBs should be carried out. Efforts should be to increase the level of coherence among HBs, Living Standard Measurement Surveys, Labor Surveys, National Accounts ect. To conclude, Albanian statistical system, still have room to develop the adequate estimates of the entire population by extending the survey results on the weights assigned to all households of the sample inquired in the survey. The calculation of expansion coefficients should carefully involve the following steps: calculation of basic weights, non - response adjustment, sample recovery and the set of expansion coefficients

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