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MASTER THESIS DESSERTATION

ANALYSIS OF POVERTY AND MATERIAL DEPRIVATION IN THE EUROPEAN UNION

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DECLARATION

I hereby testify with my own signature, that this diploma thesis ‘‘Analysis of poverty and material deprivation in the European Union” was written by me using books, articles, and others sources used and cited, which is listed in the bibliography and in references. Based on author efforts, this diploma thesis was supervised by Ing.Zuzana Smeets Křístková Ph.D., from the very beginning.

Prague, 28th November 2014 Author Signature

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ABSTRACT

The major objective of this Diploma Thesis was to analyse the causes and effects of people living-at-risk of poverty in the European Union Twenty-Seven Member States (EU-27) and consequently the aim was to quantify the relationship between people-at-risk of poverty as a measure of poverty level in the EU-27. For the purpose of this work, four independent variables (Unemployment, Education, Household Income, and Gini ratio) were selected as relevant predictors of poverty.

The income inequality among countries has increased since the beginning of 19th century, this is particularly because of various policies intended to help to fulfill the needs of people living in the society such as, unemployment support, retirement support, and other policies that are affecting peoples' incomes. Thus, the most affected countries are mostly underdeveloped countries, and in some cases, rich countries with poor social transfer policies also fall within this bracket. Another factor related to this phenomenon in emerging countries is that the recorded increase in economic growth is mostly reflected in the middle income class because they get richer while the poor get poorer and this is as a result of poor social policy implementation. Furthermore, low and high Gini coefficient in some countries of EU-27 is the results of positive infrastructural changes within their different societies and this inevitably leads to economic wealth of the specific population age groups, thereby reducing the effects of income mobility.

The results of the regression analysis shows that unemployment and Gini coefficient, were significant in explaining causes of people living at risk of poverty in the EU-27 within the period of 2002 to 2009. It was found out that the growth of poverty in the EU-27 has been the results of an increase in the number of Unemployed people and Gini coefficient.

Considering the above concepts, it is fair to suggest that Gini ratio is a relative measure of income but it does not necessarily reflect the level of wealth within the population. Against this backdrop, the analyses were based on relative measurement of people-at-risk of poverty in the EU27 countries. To emphasize further, it is important to note that the insignificant variables (Education and Household income) were excluded in the second model, regardless of the fact that they are viable contributors to poverty mitigation in the EU-27 Member states.

KEYWORDS: Income, Poverty, Material deprivation, Econometric analysis, and EU-27 Member States

ABSTRACT

Hlavním cílem diplomové práce je analýza příčin a následků života na hranici chudoby, a to ve státech Evropské Unie. Současně je cílem také výsledná kvantifikace vztahů mezi obyvatelstvem žijícím na hranici chudoby a čtyřmi proměnnými, které byly označeny jako relevantní ukazatele související s chudobou, respektive její hranicí. Tyto proměnné jsou nezaměstnanost, vzdělání, příjem domácnosti a Gini koeficient.

Nerovnost příjmů mezi zeměmi se od začátku 19. století zvětšila. To je mimo jiné dáno i rozdílnými přístupy k sociální politice, se kterou souvisí i podpora nezaměstnanosti, důchody, a další elementy ovlivňující příjem obyvatelstva. Částečně i proto jsou nerovností příjmů zasaženy méně rozvinuté země, které trpí špatnou sociální politikou, a to zejména v souvislosti s rozdělením veřejných financí. Neuspokojivá situace panuje i ve státech rychle se rozvíjejících, ve kterých povětšinou příliš neroste střední třída, ale přibývá velmi bohatých a chudší část obyvatel se stává ještě chudší. Nevyrovnaný Gini koeficient v některých zemích Evropské unie je dále následkem strukturálních změn, které zároveň přispívají k nevyrovnanosti věkové struktury obyvatelstva a nevyváženosti jeho příjmů.

Výsledek regresní analýzy mezi lety 2002 a 2009 ukázal, že nezaměstnanost a Gini koeficient mají významný vliv na objasnění příčin života lidí na hranici chudoby v EU. Bylo zjištěno, že růst chudoby v EU je výsledkem zvýšení nezaměstnanosti a Gini koeficientu.

S ohledem na uvedené koncepty autor shledává, že Gini koeficient je pouze relativním měřítkem, protože příjem populace roste, stejně jako jeho bohatství. Na základě toho byly vytvořeny analýzy pracující s relativním měřením obyvatelstva žijícího na hranici chudoby v EU. Je nutné podotknout, že vyloučené proměnné (vzdělání a příjem domácností) také přispěly k snížení chudoby v EU jako takové.

KLÍČOVÁ SLOVA: příjmů, chudoba, Materiální deprivace, ekonometrické analýzy, a EU-27 členské státy.

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1. INTRODUCTION

1.1 Background study

Nowadays, the concepts of poverty and material deprivation have been a theme for long debate. Commonly the phenomenon is found in some regions around the world, which have shown low development in different spheres such as: low social capital, healthcare, war, factors of production, corruption, pollution, political instabilities and others factors that can indirectly influence the poverty level in the country. Mostly, these regions are either undeveloped or developing because they show higher indexes of poverty compared to developed nations.

Furthermore, individual facing materials deprivation and income poverty is simply considered poor; people are considered poor if their income or resources (material, cultural, education level, and social justice) are so inadequate and precludes them from having a standard of living. Thus, they tend to have inadequate income and resources that may exclude them from participating in activities considered as the norms for higher income people in any modern society. Particularly, the poor is not only considered as an individual with low monetary resources. To capture this idea, education level could be included as mentioned in previous concepts, and it can be measured a multidimensional way.

Not fleeing from the above concepts, the meaning of poverty as people facing material deprivation does not stand only by the fact that people need to work to have income and to pay their obligations and needs. It also includes that local governments have to create sustainable programs to help those people that do not have any source of income.

According to Marshal et al. (1997), the notion of social class is one of the most important sociological variables that have been conceptualized in various terms such as ownership of the means of production, control of various assets within bureaucratic organizations, hierarchically arranged occupational prestige scores, or in the form of generalised standing in society.

This concept shows that when an individual does not belong to a social class where he or she is an owner of an asset, this makes the individual poor by the fact that they are lacking materially, and thus they cannot be part of a modern social class.

The main objective of this study titled **''Analysis of poverty and material deprivation in the European Union''** is to analyze the causes and effects of material deprivation and income poverty affecting countries within the region. Therefore, the study will also analyze the main indicators of income inequality, objective and subjective poverty, and the role of public social transfers in the reduction of poverty in the European Union member states.

The study will analyze time trends of material deprivation and income poverty existing in the region over the years from 2002-2009. The study will focus at people lacking the basics amenities and not having the minimum acceptable way of life in countries from European Union member states.

1.2 Significance of the study

Since humans invented fiscal money, the concept of poverty became more significant, because to purchase goods and materials we need a means of exchange or some currency. Consequently, poverty has been increasing since that era. Thus, the concept has not expanded in different means as; it is actually by the fact of progressive change brought by globalization that has affected people's incomes. It means that the effect of technological changes and communication, have influenced the number of unemployed peoples and increased the vulnerability of poverty threatened people around the globe. Therefore, one of the most affected groups of people today is the unskilled workers.

Thus according to the concepts mentioned above, the author intends to compare developed and less developed nations within the EU between themselves. The idea focuses on those developed nations with high technology and with a greater number of skilled workers, where the poverty was reduced by these changes. For instance, this has happened mostly in European Union member states, where the majority of countries have a standard of living by the educated or skilled workers. In less developed countries poverty has become severe because they do not have sufficient number of skilled workers to follow with the changes in different sphere of the economy, and for them the level of poverty has become too high and the term standard of living is almost non-existent.

There are also several other dimensions to understand poverty at large. Material deprivation and income poverty are not far from the previous concept, but they are very

important to measure the level of poverty according to the kind of income source and material goods a person can pursue. From recent years, health issues, household composition, kind of assets, and others items, have served as means to measure poverty while during the last centuries these items were not measurement criteria. For this reason, the concept of poverty has become very important and very complex to measure or analyse in scientific research.

1.3 **Research objectives**

The objective of this diploma thesis is to analyze the evolution of poverty and material deprivation in the EU. In particular, this study will assess whether there are some positive results when there is a reduction of peoples affected by basic materials needs and income poverty existing in the region between 2002 and 2009. As some group of people are lacking basic material needs and not having the minimum acceptable way of life in the EU-27, the study will answer why it is happening and what is the effect of this, based on the analyses of the trends obtained from secondary quantitative data and qualitative results obtained from previous studies.

Based on the results obtained from the analysis, the author will discover what countries are the most affected by poverty in the EU-27, why and what should be the impact to others wealth countries from EU-27 members states if the poverty in the poorest countries was maintained all over those years.

1.4 Structure of the study

The third section of this diploma thesis will present all general concepts about the study. These will be defined using theoretical background made out from similar academic studies. Therefore, in this chapter, the author mentions all the topic and sub-topic that will be used in the results and discussions about the EU-27, using graphics and tables.

In the methodological section, the study focuses on OLSM as the model to find the qualitative results of our study, the fourth section of the study explains the results and discussion based on the analysis of poverty and materials deprivation existing in European Union from 2002 to 2009. Finally, the study ends with a conclusion and some recommendations.

2. RESEARCH METHODS

2.1 Data sources for the research

The secondary data used for the analysis were obtained from the European Union Statistic (EUROSTAT), and, European Union Statistics on Income and Living Conditions (EU-SILC). In particular the EUROSTAT database (including citations) were used to obtain indicators of unemployed people in the EU-27, Education by peoples attending tertiary level in the University aged 30 to 34 years old as a percentage of total population in the Union, and data about household income; From EU-SILC (supply citations), the author obtained data such as: people-at-risk of poverty, material deprivation, and Gini coefficient. The author used available data from 2002 to 2009, because the intervals between these years supplied more information to the study about previous and current indicators related with variable that are contributing to poverty in the EU-27. Due to complications arising from inconsistent data availability across all EU countries, the individual observations were converted to mean values over 2002-2009 to filter out missing observations and excessive variation in some periods.

2.2 Specification of the models

The main method used in the Diploma Thesis data was a multiple regression analysis. To determine the relationship between dependent and independent variables, linear econometric model using OLSM as is described below:

$\mathbf{Y_i = \gamma_0 + \gamma_{1x1i} + \gamma_{2x2i} + \gamma_{3x3i} + \gamma_{4x4i} + u_i}$ where:

Y: the value of the dependent variable

X: the value of the independent variable

$\boldsymbol{\gamma_0}$: the intercept or regression or constant

$\boldsymbol{\gamma_1, \gamma_2, \gamma_3, \gamma_4}$: represents the regression coefficient of the independent variables

u_i : Stochastic value or error term.

Regression coefficients of OLSM are calculated as:

$\gamma = (X^T * X)^{-1} * X^T * Y$

The concrete form of the econometric model analysed in the thesis is following:

People at risk of poverty in EU-27i= $\gamma_0 + \gamma_{1*(\text{Unemployment})i} + \gamma_{2*(\text{Household income})i} + \gamma_{3*(\text{Education})i} + \gamma_{4(\text{Gini ratio})i} + u_i$

The econometric model is consequently tested statistically, with the following hypotheses:

H_0: $\gamma_{i=0}$: It shows that there is no statistically significant relationship between dependent EU Poverty and independent j variables, where j is Unemployment, Household Income, Education, and Gini ratio.

H1:$\gamma_{i\neq 0}$: Inversely it shows that there exists a statistic significant relationship among poverty level and jth independent.

The computation of the parameters and econometrics tests was performed using econometrics software such as GRETL and IBM SPSS statistics. Based on GRETL, using the analysis of ANOVA table, the procedure was the same using F-test, by the fact that if F-calculated > F-table, then we reject the null hypothesis (H_0), and accepting the alternative hypothesis (H_1). Using F-test, the author can state that the entire regression is statically significant if the null hypothesis (H_0) is rejected, and otherwise not. Based on the t-test, the null hypothesis (H_0) was used to tell us that there is not relationship between dependent and independent variables, while the alternative hypothesis (H_1) will tell us that there exist a relationship between dependent and independent variables.

Using multicollinearity diagnostic test, the Variable Inflation Factor (VIF) was used to determine if in the model exist co-linearity problems. Therefore, the VIF is expressed as: VIF=1/1-R^2, which 1-R^2 is the tolerance.

Therefore, to determine the existence or the non-existence of heteroskedascity in the econometric model, White-test and Breush Pagan-test were used. In addition, as the R^2 does not show if the model is adequate or not, then author decided to run the Ramsey's reset test specification to testify the acceptance of the econometric model.

3. LITERATURE REVIEW

3.1 Definitions and theoretical considerations

This section of the thesis, aims to give an idea about the difference in the meaning of poverty and extreme poverty based on many experts and academics that have suggested many definitions over the years.

3.1.1 Poverty, relative poverty, and extreme poverty

Firstly, to define poverty is important to know that the concept is too wide and varies according to different authors.

According to Bellu L. Giovanni, and Liberati P., (2005) in World Bank (2001), lack is the base case situation for the definition of poverty where individuals lack command over economic resources.

Sen (1985) suggested that inability is best associated with the capability failure to participate in a society.

Considering standard of living as an issue of poverty, the concepts above still prevails. Well, according to Watts H. W., (1968), and World Bank (2001), standard of living usually focuses on what poverty depends. Therefore, they suggested that the idea is what deemed to constitute a socially acceptable standard of living by a given society at a given time, thus meaning for them that in a given society where most people own cars, the use of public transport may be a signal of poverty.

Considering the previous concepts above, in modern society often existing in developed countries, the use of public transport does not mean that people are poor but inversely the rich people try to save their income and resources by using the best public transportation system as it is the case in Czech Republic and other countries around the globe. Continue, The Investopedia (2013) suggested that standard of living is the level of wealth, comfort, material goods and necessities available to a certain socioeconomic class in a certain geographic area.

Not fleeing from the previous concepts, to measure or to be considered as individual living a standard of living, is necessary to have a source of income based on his or her capacity as employees, and also their abilities as employee, their class disparity, level of poverty (medium, low, or below line), quality and affordability of house, hours at work, level of education etc. By the country level, it is important to

consider GDP (Gross Domestic Product) growth rate, and Inflation, services, infrastructures, unemployment rate, environment quality, political stability, religious and safety securities. Others useful items are the opportunities to have leisure times according to the number of days per year.

According to EU-SILC (2004), in the European Council of Ministers of 1975, the poor are defined as individuals whose resources are so small as to exclude them from the minimal acceptable way of life of the Member States in which they live. As a result, the notion of poverty has undergone significant changes in recent years. These have been due to the constraints and insufficiencies of a notion, based solely on income terms (Ayala, Mayo, and Jurado, 2009).

Continue, poor individuals are those which their equivalents of household income are less than half of the median prevailing in each country. Therefore, the use of a relative income threshold means that richer countries have the higher poverty thresholds.

Considering the concepts above the line, DCSS (2008) suggested that the term poverty exists when some people fall short of reasonably defined minimum levels of wellbeing such as access to certain consumptions or income levels, housing, health and education facilities and certain rights recognized according to standards of human needs and socio-economic conditions of the society. Therefore, considering poverty line as a variable of poverty, the DCSS (2008) suggested that poverty line is the minimum required level acquiring by the poor to escape the poverty thereby identifying poor.

As was described above the line the variables of poverty are diverse. One of the variables is the Poverty Gape that DCSS (2008) defined as the requirement of money or better shortfall by a poor to come out of the poverty or gap between the total consumption value of a poor and the value of the poverty line.

Considering the concepts, FAO (2005) suggested that poverty measures the value in real terms of a given level of goods by ensuring some forms of minimum subsistence.

In addition, author suggests that the first attempts to define poverty as an absolute or extreme have taken into account the minimum acceptable diet cost based on normal daily expenditure to maintain a normal body mass. Extreme poverty means that households cannot meet needs for survival; they are chronically hungry and unable to

access health care, lack the amenities of safe drinking water and sanitation, cannot afford education for the children and lack rudimentary shelter as not having a roof over the head as shelter against rain and cold.

The absolute poverty concepts refer to a standard of living defined in these terms. Extreme poverty means when income levels are inadequate to meet a minimum standard of living, and this is contrasted with relative poverty in which there is an income level which to some extent is considered relatively low to meet a reasonable standard of living in that society. The author suggest this kind of poverty as a state in which people do not have the minimum acceptable level of income deemed necessary for living in a civilized way.

3.1.2 Material deprivation

Material deprivation is the enforced lack of a combination of items depicting material living conditions, such as housing conditions, possession of durables, and capacity to afford basic requirements (EU-SILC, 2006). Based on EU-SILC, it is worth highlighting that the proposed indicators are not indices of social exclusion that are taken into account of all dimensions of the phenomenon such as access to the labour market, health, education, social participation and others.

Thereby, as a lifestyle deprivation using items, ideologically there are four requirements, which are:

1. The need to reflect on the lack of an ordinary living pattern common to a majority or large part of the population around the world
2. The need to allow for international comparisons
3. The need to allow for comparisons over time
4. The need to be responsive to changes in the levels of living among the people

Author**:** Helsinki (2006)

Turn to the point, CSBL (2013) suggested that material deprivation are the circumstances denying household an access to certain material goods, where these circumstances are referred as lack of money, unsatisfactory housing conditions and refusal from use durables.

From the same point, Whelan, and Maitre, (2010) state that material deprivation interacts with country in the manner that it leads to it having substantial consequences for more subjective economic stress among the richer rather than poor countries.

Considering the above concepts, Stávková, Birčiaková et al., (2012) said that material deprivation criteria is divided into four groups, which are considered as financial stress, housing conditions, availability of consumer durables and basic needs. Wherefore, Stávková, Birčiaková et al., in the same year suggested that the financial stress assesses the load of housing costs and difficulties of such households to make ends meet.

As the concept material deprivation has been too wide, Lancashire (2013) sustained that there are also indirect impacts as considering a child living in a cold, damp home by not having anywhere warm to do their homework that will have impacts upon the long term achievement of that child and therefore their access to employment. Thus, Lancashire (2013) stressed stating that it can affect their life options including risk health behaviours, which will in turn affect their health. Continuing, Lancashire added that house conditions are considered from two perspectives such as the quality of environment including noise, pollution, crime and vandalism, amenities related equipments equipped with shower or bath and flush toilets, roof leakages, moisture, and the light conditions. Thereby, under consumer durables the author understood a phone, a television colour, a personal computer, a washing machine and a car.

3.1.3 Income inequality

According to World Bank (WB) studies, to begin to understand what life is like in a country it is necessary to know for instance how many of its inhabitants are poor, thus it is not enough to know what the country per capita income. Therefore, the number of poor people in a country and the average quality of life also depend on how equality and unequally of income are distributed.

According to DCSS (2008), the presence of high inequality in possession of resources and access to basic consumption needs among people or social segments are attributed to a society that leads to several social conflicts.

The income inequality concept comes from a measurement of the distribution of income that highlights the gap between individuals or households thus making most of the income in a given country while others very little. This phenomenon rise in

sometimes because naturally many countries are poor by lack of factor endowments and not having a stable political stability to co-operate with other advanced nations. So, the inequality can become too high by this reason.

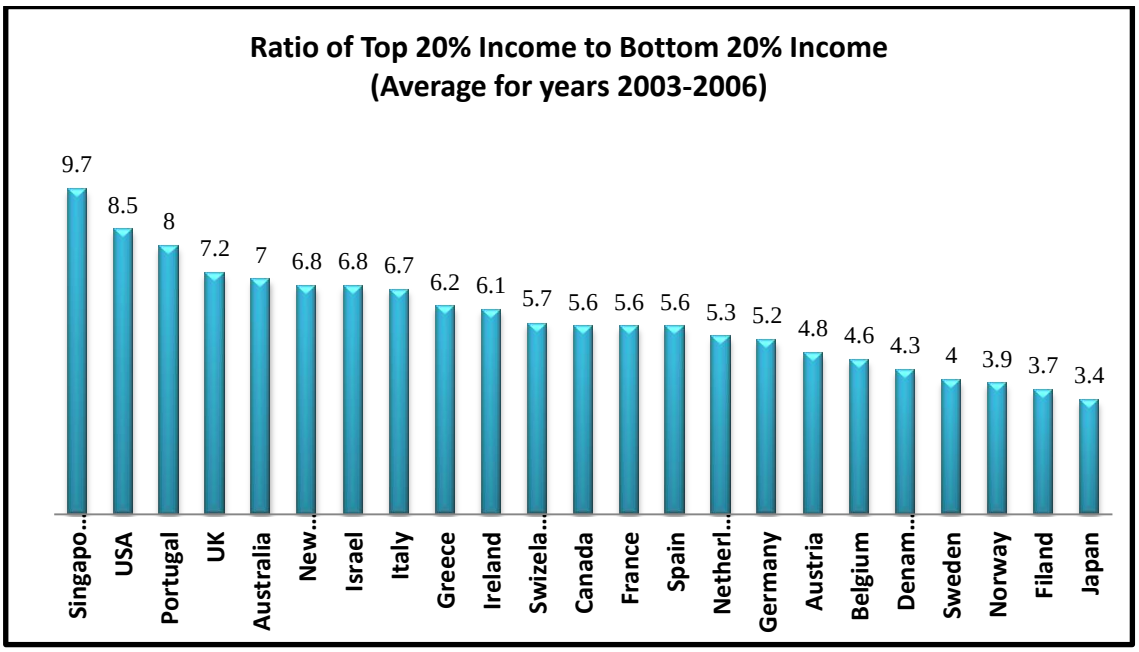
According to many scholars, income inequality is the unequal distribution of household or individual income across the various participants in an economy. Therefore, the term is often present as the percentage of income to a percentage of population existing in one particular nation.

For instance, many countries in the European Union were poor before the EU Structure policy or Cohesion policy, which had as mission to push poor countries to grow their economies, reducing the huge difference existing between rich, and poor, and finally creating standard of living. One of these countries that had enjoyed this co-operation is the Czech Republic which in 2006 became the first former member of the Council for Mutual Economic Assistance (CMEA) to gain the status of a developed nation according to the World Bank. In addition, to gain this status the country had to follow some rules such as peace, good democracy, social stability and low level of unemployment, environmental issues, Human Development Index and others.

From the above points, Wilkinson, R. and K. Pickett (2009) suggested that income inequality is an indicator of how distributed are the material resources across society. According to Wilkinson, R. and K. Pickett, some people consider that the high levels of income inequality are morally undesirable, while others focus on income inequality as bad for instrumental reasons thus finding it as cause of conflict, limiting co-operation or creating psychological and physical health stresses.

Graph 1 simply is illustrating the economic inequality existing in twenty-four nations, where the high inequality implies more people facing material deprivation and income, thus the poverty is high. While the low inequality implies that low poverty and growing standard of living or equality between peoples, thus the poverty is low. Based on U.N. from 2003 to 2006, this figure tracks the ratio between the average incomes of the top and bottom fifths of families in these nations. Furthermore, this figure gives us an idea of how income inequality among countries. According to some reviews, the inequalities of income among countries in the EU-27 have been high.

Graph-1 Trends of cross-national comparisons of income inequalities from 2003 to 2006



Source: Author's analysis based on data from. Development Program Human Development Indicators (DPHDI, 2003-2006)

3.2 Measure of material deprivation and income poverty

By deprivation measurements, an index of material deprivation is an attempt to summarise the living standards of families at different levels of income **(**Berthoud, Bryan, and Badasi (2004). Based on some survey questions about whether people do or not have certain items, Berthoud, Bryan, and Bardasi (2004), suggested that people could not afford to participate in normal daily activities, if they find it difficult to manage their budgets.

3.2.1 Work intensity of household

To make the concept very clear, Jackson, and Jones (1998) defined work as the central to current understandings of poverty, and wellbeing more generally as well as to prescriptions for poverty reduction. In the same year they suggested that by this way, poverty has traditionally assessed in terms of household income or command over commodities.

Adding, there are many aspects to work intensity including multitasking, time policy, health implications, and policy considerations. Continuing, multitasking is the

overlap of many activities usually care and informal work that negatively affects the livelihood of people especially women in the developing world.

In 1995, Sagario defined time poverty as the lack of time for leisure and rest activities after time spent working. He states that high work intensity couple with multitasking and time poverty has a negative correlation with health outcomes.

Another definition suggested by EU-SILC (2006), is that work intensity is the ratio between the number of months that household's members of working age between eighteen to fifty-nine (18-59), with the exclusion of dependent children in the age group between eighteen and twenty-four years worked during the income reference year and the total number of months that could theoretically have been worked by the same household members.

Defining, EU-SILC (2006) also defined very low work intensity as people of all ages typically from zero to fifty-nine years old living in household where the members of working age is less than twenty percent of their total potential during the previous twelve months.

Base on the above concept, the author suggest that work intensity is an activity in relation to the capacity for that work. Therefore, this theme actually affects poor and rich countries in different ways.

3.2.2 Frequent activity status

To have an idea, activities status are referred as the stage of an activity life cycle or as a planned activity that is only beginning, continuing, and after to be completed.

The activity status of a population comprises all persons above a specific age in which activity status are determined in terms of the total number of weeks or days during a long specified period such as the preceding twelve months or the calendar year. Usually employed population comprises all persons in the usually active population who during the period of usual activity had a total number of weeks or days of employment, that was at least half of this period (Hussmanns, R., Mehran, F., Verma, V., 1990).

Sustaining, Hussmanns, R., Mehran, F., Verma, V., (1990) suggested that the population not usually active consist of all persons in the population who were not

usually active during the long specified and referred period, including those below the specified age.

In addition, the concept of frequent activity status are based on idea that not all individuals have a stable or fixed source of income, so some have a part-time job, a fixed job, and other have any other kind of job. Therefore, here the author can understand that more time and days spent at work determine how someone gains according to his or her educational level, professional abilities or skills. Not having a fixed source of income from its own activity may generate extreme poverty or absolute poverty by the fact that people need self-sustainability to cover their obligations. Often the rise of poverty by not having a stable source of income, usually affect those groups of people or families with a high numbers of children. Thereby, having a stable job means having a sustainable source of income and being able to sustain themselves and not suffer deprivations of basic needs and thus the equality of income tends to rise.

3.2.3 Household composition

Before defining the term, it is important to know the concept of household that is the basic term to this section. Household means all persons living under one roof or occupying a separate house unit, having either direct access to the public area, or even a separating cooking facility, where law relates the members of a household that constitute a family. In this case, we easily can understand the general term of household composition thus conceptualized by many scholars. Therefore, scholars define household composition by peoples living together and their relationship to one another.

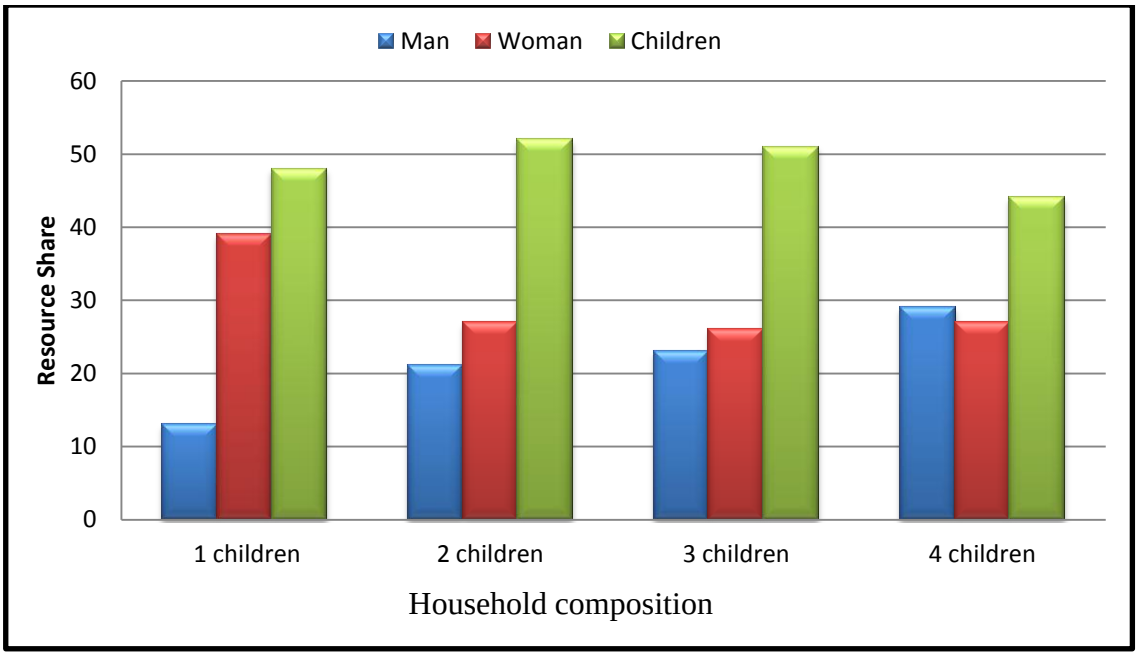
The composition of the household determines a person household size. The idea comes from where one person may live in another household but not being part of his or her composition or household size. Based on it, household composition can vary from family to family relationships, because families living together and having deep relationships, generally classified in the household composition.

Based on the theory of the families and policy, social scientists generally use the term family to refer to a group of closely related parents, not necessarily living together (Jacobsen, Jensen et al., 2004).

Theoretically, Murdock, and Hoque (1995) stated that household has been one of the main reasons for the absence of a comprehensive demographic references system for smaller population. Adding, the theory suggested by Murdock and Hoque, sustain

that the size of household composition has been a big impact to the size of population existing in particular country.

Graph-2 Trends of percentage change of individuals by household's composition in Malawi (2013)



Source: Author's analysis based on Low, Arthur et al., (2013)

According to Low, Arthur et al., (2013), Graph 2 above is showing that the total share devoted to children grows as the number of children grows.

In addition, clearly the graph (2) shows that the shares of resource from family members with one child tend to be less rather than family members with two, three or four children. From a shared point view, within family members the most affected by poverty are women and children. Shortly, it means that the high share of resources for many children may influence the income source and may stress poverty.

According to Low, Arthur et al., (2013), from the share of resources, the male head of the household consumption remains constant.

3.2.4 Age, gender, and education

According to Thane (1978), age classification varies between countries and over time, reflecting in many instances the social class differences or functional ability related to the workforce. In addition, there are severe definitions about age. The term describes adolescent, adult, child, infant, and newborn.

Table-1 Basic definition of age

Categories	Ages
Adolescent	16 or 17 year
Adult	18 year and older
Child	2 or 15 year
Infant	29 days up, and less than 2 years
Newborn	from 0 till 28 days of age

Source: Ontario, Ministry of Health and Long-Term Care (OMHLC, 2009-2010).

Not fleeing from the previous concepts, UNESCO (2013) suggested that youth relates to a period of transition from the dependence of childhood to adulthood's independence. UNESCO also indicated youth as a person between the age where he or she may leave compulsory education, and age at which he or she finds his or her first employment.

Wherefore, Gorman (1993) suggested that the ageing process is a biological reality, which has its own dynamic, largely beyond human control. Thus, he stressed that age of 60 or 65, roughly equivalent to retirement ages in most developed countries.

"*Many times the definition is linked to the retirement age, which in some instances, is lower for women than men. This transition in livelihood became the basis for the definition of old age, which occurs between the ages of 45 and 55 years for women and between the ages of 55 and 75 years for men*" *(Thane, 1978).*

3.2.5 Health problems

According to World Health Organization (WHO, 2003), health is defined as a state of complete physical and social wellbeing, and not only the absence of disease or infirmity. Generally defining, the author understand health problem as disabilities of people with physiological and psychological problem. According to European Commission (2011), disabled people are people with serious functional limitation due to physical, physiological or mental afflictions.

Considering the nature of our study where health problem can influence the wealth of countries in the field of productivities, in many countries health problems are linked with many aspects such as consumption of alcohol, drugs, basic nutrition, noise, pollution, basic sanitation (house condition) and others. According to World Health

Organization (2011), many countries recognized the serious public health problems caused by the harmful use of alcohol. Adding to that, the consumption of alcohol and cigarettes in the EU-27 are massive and are one of the major causes of health problems in the Union.

3.2.6 Housing tenure status

According to DCLG (2013), housing tenure refers to the financial arrangements under which someone has the right to live in a house or an apartment. Housing tenure describes the legal status under which people have the right to occupy their accommodation (Diaz, 2009). According to Diaz, the most common forms of tenure are:

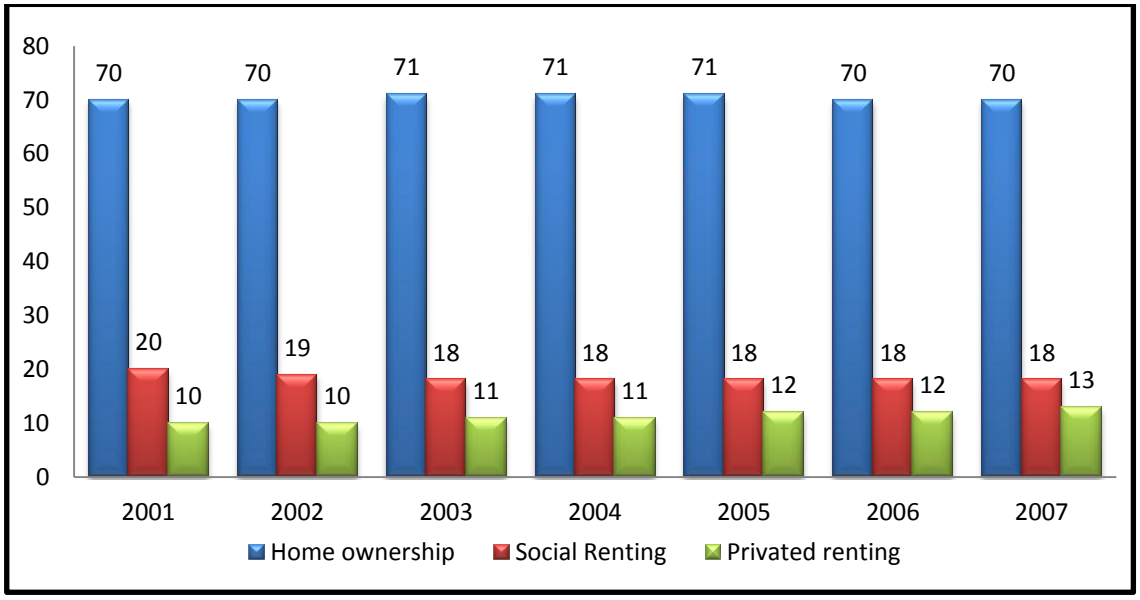
1. Home-ownership: this includes homes owned outright and mortgaged
2. Renting: this includes social rented housing and private rented housing

Author: Diaz (2009)

In addition, renting status can be divided into two important parts namely social renting, and private renting which, correspond to almost all housing tenure status. Firstly, a private rent is a type of property from which the owner receives payments from the occupants, known as tenants, for occupying or using the property. Second, the owner of rental property is the person who may be entitled to take certain tax deductions and depreciation. Sustaining the idea, The Scottish Government (2013) suggested that the private rented sector is a housing tenure with properties owned and let by private property owners on the open market.

The Graph 3 shows that the home ownership has been dominant in the household tenure status in UK from 2001 to 2007. Moreover, their values range from 70 percent to 71 percent all over the years. In 2001, 20 percent of population of UK were living social renting and thus increasing to 18 percent in 2007. From the same years, private renting increased from 10 percent to 13 percent. Therefore, in the UK, almost 18 percent of population were living in a social renting controlled by a legal person from a rent house association, and almost 12 percent were living in a private renting.

Graph-3 Trends of proportion of households in % by tenure in England, 2001-2007



Source: Housing in England 2006-2007, OLG, 2008

3.3 Relationship between material deprivation and poverty

We knew that the relationship between material deprivation and the poverty of income has been a theme for great investigations and the reason for important discussions.

According to Layte, Maitre, Nolan et al., (2001), theoretically and empirically, both elements can have an impact on the relationship between income poverty and material deprivation. Continuing, Layte et al suggested that theoretical elements have to be with the household command over resource and the household's needs. Based on Layte et al suggestions, in addition the author suggests that household command over resources is a variable of poverty which include disposable income, the accumulated saving to increase their current consumption capacity, payments of debts that can reduce the ability of householders to consume. Another variable influencing the relationship between poverty and material deprivation is the household needs that relate with basic amenities.

4. ANALYSIS OF POVERTY AND MATERIAL DEPRIVATION IN THE EUROPEAN UNION 27

4.1 Basic information about EU

Historically, the birth of EU was based on three main organizations established in 1957 such as European Economic Community (EEC), European Coal and Steal Community (ECSC), and the European Atomic Energy Community (EURATOM) formed by the six (6) inner countries (Belgium, France, Luxembourg, Netherlands, and West Germany) originally supported by four (4) visionaries such as Alcide De Gasper, Jean Monet, Robert Schuman, and Henri Spaak. In addition, the Union is a supranational Organization, economic, and geo-political union covering primarily large portion of European Continent. The EU was formed in 1993 and architected by Helmut Hohl and Françoes Mitterran, in the period after arrangements of the Maastricht Treaty with participation of Member States of the EU community, and consequently have been expanded by the way of countries following fundamental values (Freedom, Equality, the rule of law, democracy, respect for human right of persons belonging to minorities, and others) demanded from EU to each State that are willing to join the community.

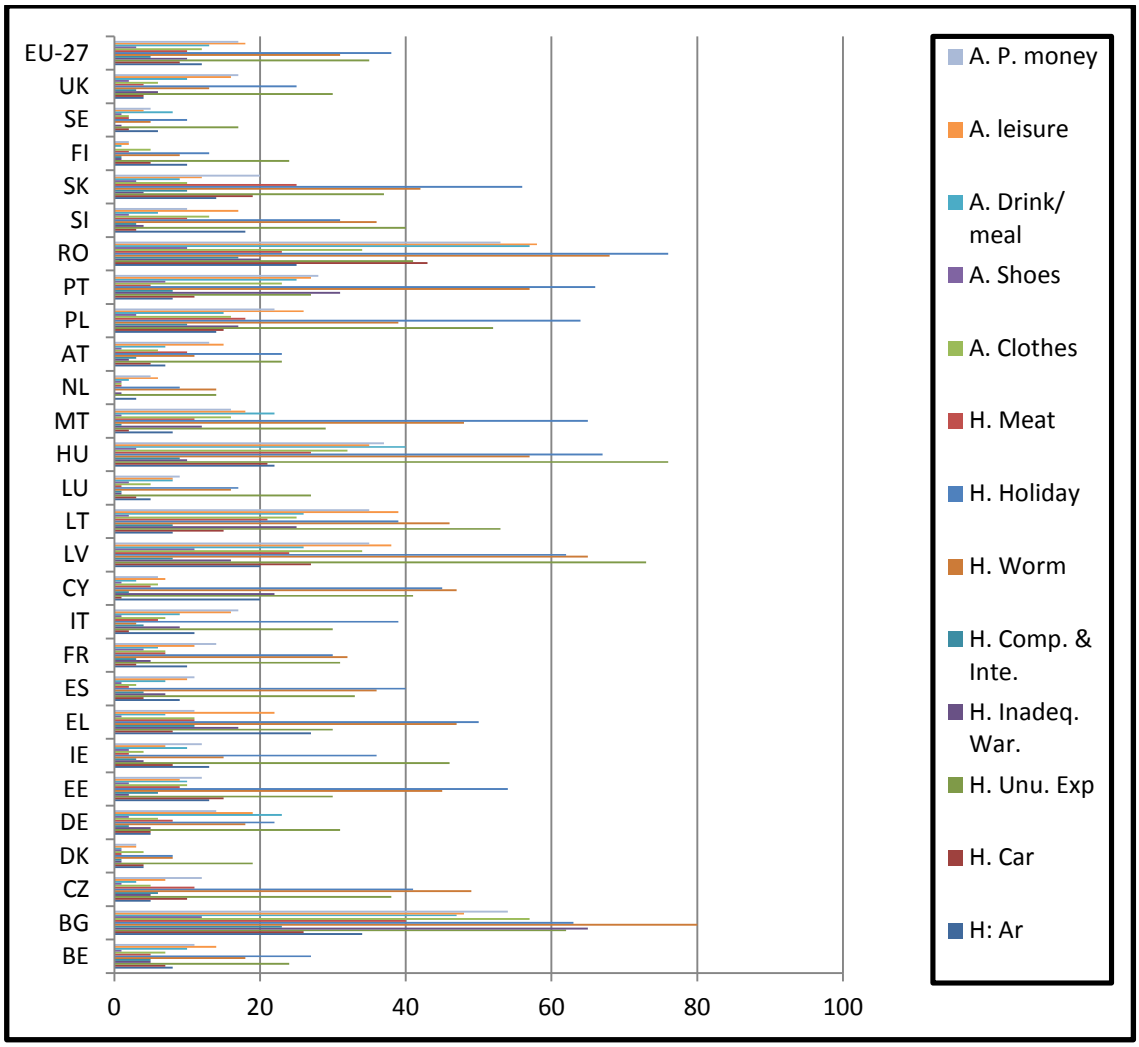
To achieve the European Union level, Eleven (11) visionaries behind European Unification, contributed much. These are: Richard Coundenhove-Kalergi (1894-1972), Winston Churchill (1874-1963), Robert Schuman (1886-1963), Jean Monnet (1888-1979), Pau-Henri Spaak (1899-1972), Konrad Adenauer (1876-1967), Joseph Bech (1887-1975), Johan Willem Beyen (1881-1954), Walter Hallstein (1901-1982), Sicco Mansholt (1908-1995), and Alterio Spinelli (1907-1986).

In 2007 EU had Twenty-Seven (27) States, but today the EU is composed by Twenty-Eight (28) Member States, of which the latest integration was of Croatia (2013), and thus the Union is still going to expand. From the global point of view, the EU represents 7.3 % of the worldwide population, with a population increased from 490 to 500 millions of habitants, represent 30% of global Gross Domestic Product (GDP), and 55% of combined Worldwide Official Development Assistance (WDA) with intention of increasing countries Economic growth and Development in different spheres, and also minimizing levels of poverty around the globe. Therefore, the EU has been a source of reduction of poverty and creation of standard living in many Member States by the contribution of Seven (7) EU institutions (the European Parliament, the

European Council, the Council, the European Commission, the Court of Justice of the EU, the European Central bank, and the European Court of Auditors) and their such tools as European Union Regional Development Fund (ERDF), European Social Fund (ESF), European Guidance Guarantee Agriculture and Forest Fund (EGAFF) and others.

4.2 **Evolution of poverty by items**

Graph-4 Trends of incidents of items by whole population including children's in the EU-27 (% in 2009



Source: Author's data analysis based on EU-SILC, 2009. H=Household & A=Adult

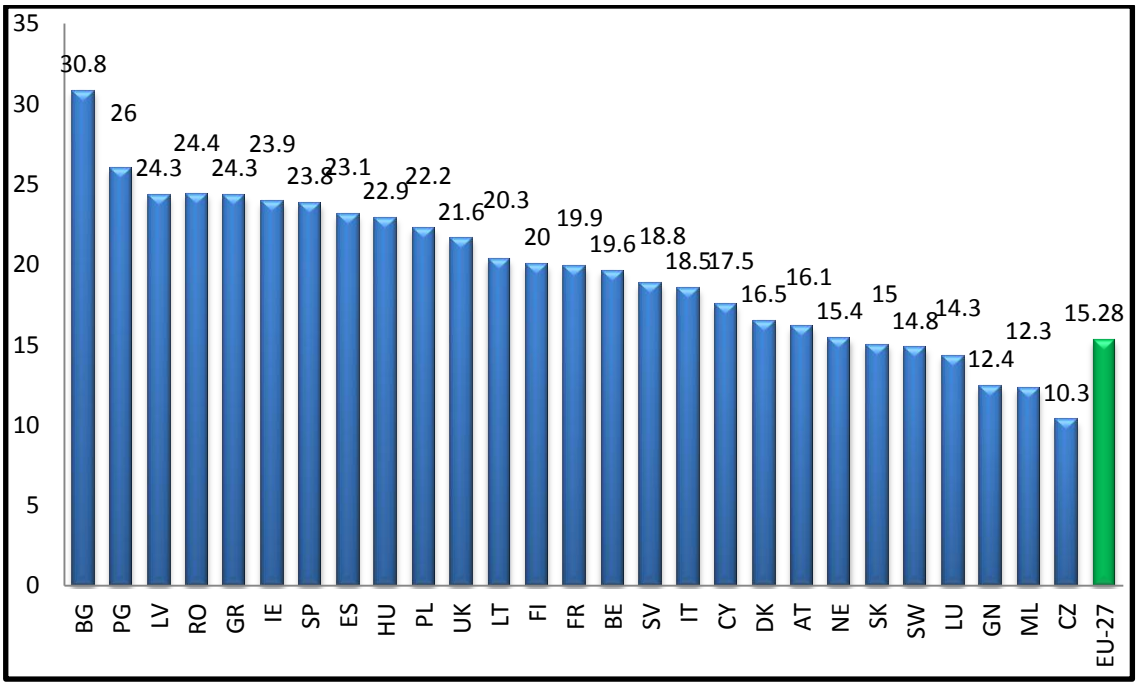
In 2009, in the EU-27 the evolution of poverty has been also caused by lack of basic amenities such as household arrears, household inadequate warmth, household holiday, adult shoes, household cars, household computers and internet, household

meat, adult drink and meal once a month, household unexpected expenses household replace worn-out furniture, adult clothes, and adult leisure activities.

The Graph 4 shows that countries with high score are the most deprived of basic materials needs in 2009 in the whole EU-27 (See Appendix 1). These countries are Bulgaria (80% of replace worn-out furniture), Latvia (47% of replace worn furniture), Czech Republic (49% of replace worn out furniture), Cyprus (65% of replace furniture), Lithuania (53% of unexpected expenses), Hungary (76% of unexpected expenses), and Malta (65% household holiday), Romania (76% of household holiday), and Portugal (66% of household holiday). The rest of countries have shown degree of similarity. Of course, the evolution of poverty cannot be measured only by individual items.

4.3 People at risk of poverty

Graph-5 Annual average of people living at-risk-of poverty in % in the EU-27 (2002-2009)



Source: Author's calculation and analysis based on data from EU-SILC, 2008, 2009, 2014. Eurostat Commission in 2013

Graph 5 shows that in the EU-27 some countries are recording high level of people living at-risk-of poverty and others not (See Appendix 4). Based on it, countries such as Bulgaria (30.75%), Portugal (26%), Latvia (24.30%), Romania (24.40%), Greece (24.30), and United Kingdom (21.59), are considered as the highest, while

countries such as Czech Republic (10.34%), DK (16.55%), Germany (12.41%), Luxembourg (14.25%), Malta (12.30%), Slovakia (15.03%) and Sweden (14.80%), have the lowest level of people living at risk of poverty of which the rates are below the EU-27 average of 15.28% thus meaning that 15.28% of EU-27 citizens are living at risk of poverty (See Table 2).

The highest rate was recorded in Bulgaria (30.75%) above EU-27 average (15.28%) from 2002 to 2009, and the lowest in Czech Republic (10.34%) below the EU-27 average (15.28%) from 2002 to 2009. In addition, the reason for high rate of poverty in these countries were caused by many factors such as: low level of social protection, difficulty of finding employment, high proportion of students in countries, black minorities and ethnic groups, education level and others.

Considering the above concepts, Bulgaria is one of the poorest countries in the EU-27 after fourteen years (14) of membership. This is because every fifth (15^{th}) family lives below the lower limit of poverty, thus meaning 123.028 USD (95 Euro) per person. Furthermore, in Bulgaria, around 636000 people or a third of the employed citizens belong to the category of the working poor, as the average salary in their sector is significantly lower than the national average (EuroActiv, 2010).

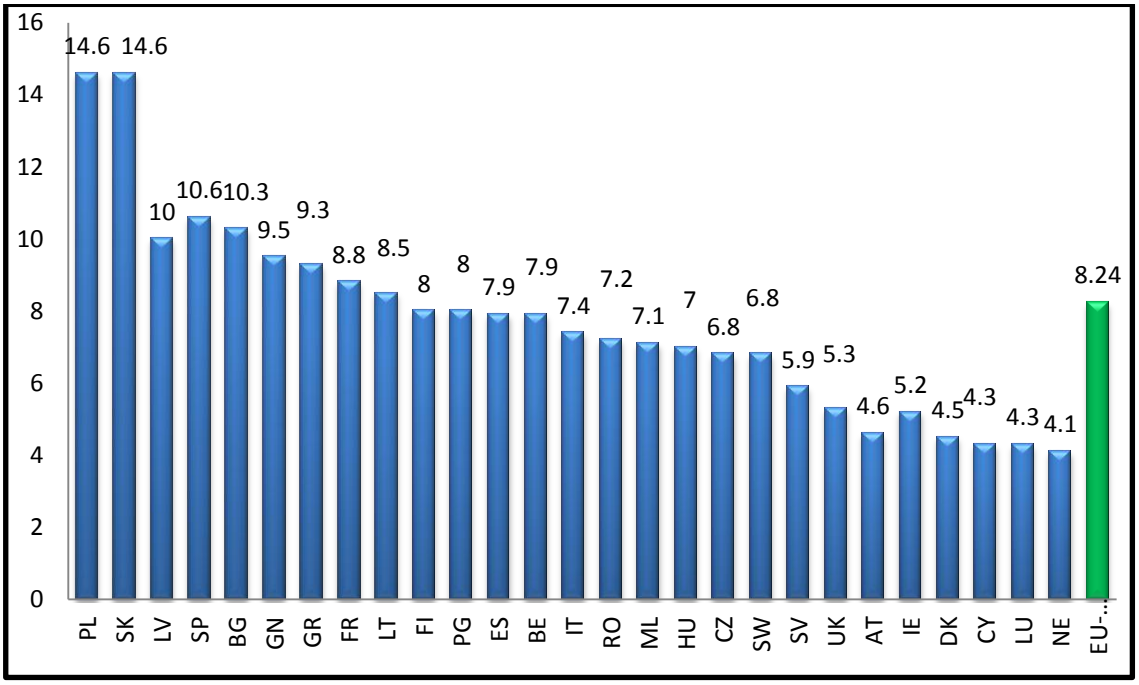
Based on the same author, the retired people in Bulgaria are considered as the most vulnerable group of people. In addition, the delay and freezing of salaries from public and private sectors in Bulgaria have been the main cause of increasing poverty. Well, the factors are numerous. Country such as Czech Republic where the rate of poverty is too low tends to be better than Bulgaria in all aspects.

4.4 Factors causing poverty and material deprivation in the EU-27

4.4.1 Unemployment

Graph 6 indicates that from the EU-27 average (8.14%) from 2002 to 2009, member states such as Bulgaria (10.34%), Germany (9.45%), Greece (9.30%), Spain (10.5%), France (8.75%), Latvia (10%), Lithuania (8.48%), Poland (14.61%), and Slovakia (14.56%), have registered high rate, which the highest among this group is Poland (14.61%) on average (2002-2009) and above EU-27 average of 8.14% from 2002 to 2009. And among Member States where the rate is the lowest and being below the EU-27 (8.14%), is Netherland (4.05%) See Table 2).

Graph-6 Annual average of unemployment in % in the EU-27 (2002-2009)



Source: Author's calculation and analysis based on data from EUROSAT (2000-2013)

Furthermore, the reason of high unemployment rate in Poland and Slovakia relates to many factors. These factors are: In Poland for example, the participation rate of the population aged between 24 and 65 in any form of training or further education amounted to a mere 5.0% in 2005. According to Eurostat data (Narozny, 2006); professional mobility is low, because of poor functioning of the education system, and especially vocational training (Narozny, 2006). Education is one of the main variables that strongly contribute to acquire income as well to the reduction of poverty and the creation of middle classes.

According to OEDC (2005), the regional mobility in Poland is weak, because from 1998 to 2002, the average net inter-regional migration rate from people aged from 15 to 64 was 0.08% for Poland and 0.16% of OECD average. Sustaining, the mobility of people to find job in the country side, heavily depend on regional development, the increased number of companies, good infrastructures, transportation system, wages, and others. Based on OECD data, the tax wedge in Poland of 43.1% was higher than the OECD of 36.5%, and EU of 41.4% (OECD, 2005). In addition, if Poland charges higher taxes from workers, there will be a high probability that the number of unemployed people increase because of the decrease of their motivation to work, seeing that all their income goes to the government.

Another factor regarding Poland is the Inter-industry mobility that has declined substantially between 1994 and 2002, thus reflecting the slowdown in infrastructure in Poland (Kwiatkowski et al., 2004). Therefore, these are the main reasons why Poland has showed higher rates compared to other countries in the EU-27 Member States.

Considering countries with lowest rates such as Luxembourg and Netherland Luxembourg for example, has been one of the countries which offer supports and attractiveness to their employees. According to OECD (2013), in Luxembourg, there is 7% points of difference in employment rates between those who graduated from vocational programmes and those who hold a general qualification. In addition, the vocational training has strongly influenced the reduction of unemployment in Luxembourg, and consequently motivating peoples to look for jobs. Another factor related is how young teacher are well paid in comparison with teachers from OECD countries, this according to OECD (2013).

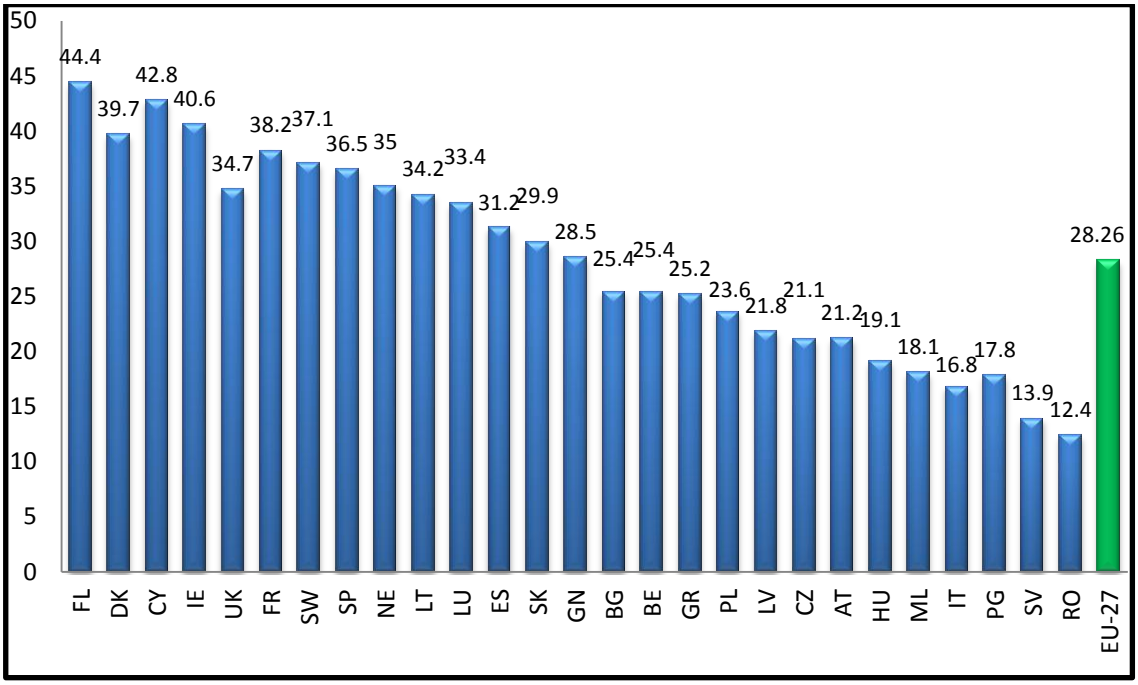
According to OECD (2013), Luxembourg has the highest rate of spending in resources for education per student. Sustaining, author suggests that education is a key to the reduction of unemployment in every country.

4.4.2 Education

Generalising, the education system in the EU-27 appears to be a way of movement among people from their respective country to another countries and vice-verse. The author suggests that the movement of people from one region to another for better education in the EU-27, means that some countries do not have a good infrastructures (high concentration of universities campus), good educational policy, standard of living, safety, touristic attractions and other related factors. To support these evidences, Xu (2010), suggested that many student study in Prague because its beer is famous in the world and its food and transportation are cheap. To stress, Xu suggested that the country offers more aspects of human life compared to other big nations such as United States. Its culture, people's attitudes, and its national ambitions help to shape their entire character.

Well, the above concept suggested by Xu (2010) prevails because many students around the globe have the same perception when they decide to study abroad. Sustaining, Graph7 shows that there are discrepancies among peoples in the EU-27 Member States attending tertiary education level.

Graph-7 Annual average share in % of total population aged 30 to 34 years who successfully finished University (2002-2009)



Source: Author's calculation and analysis based on data from Eurosat (2013-2014)

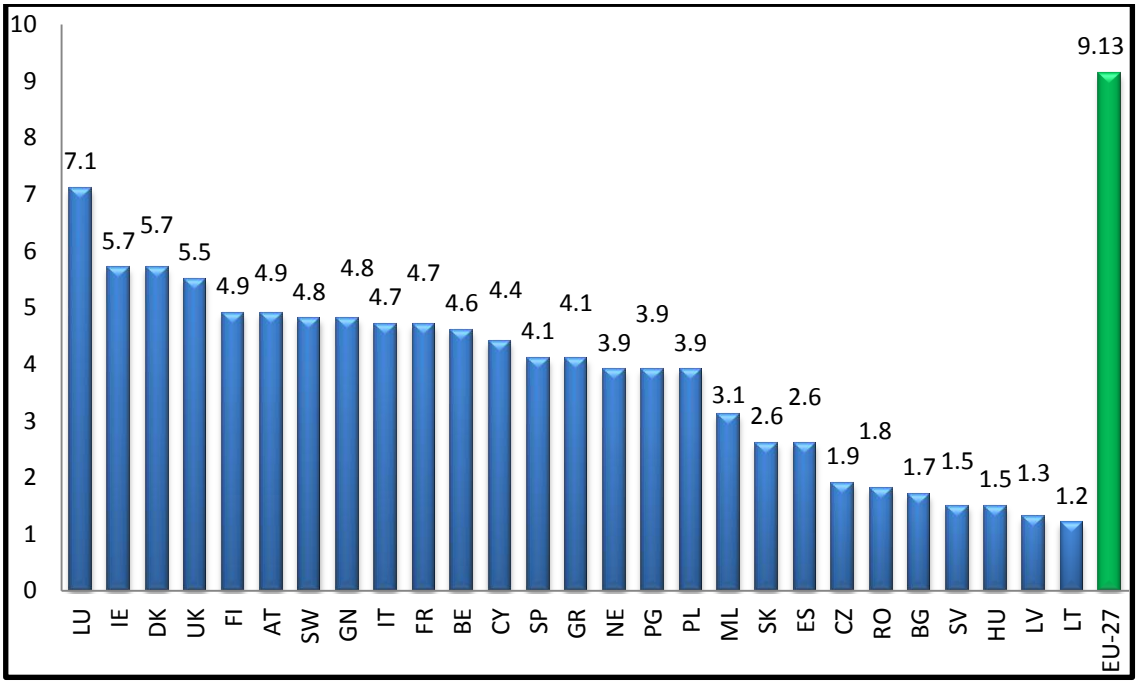
Not fleeing the above concepts, the education level in countries such as Cyprus (42.76%), Denmark (39.74%), Finland (44.39%), Ireland (40.56%), Lithuania (34.21%), Luxembourg (33.39%), Nederland (35.29%), Spain (36.54%), Sweden (37.15%), United Kingdom (34.08%), and Estonia (31.19%) has been higher compared to countries which rates are below the EU-27 average (28.26%) from 2002 to 2009. Among these countries with lower rates are Romania (12.35%), and Slovenia (13.98%) which are considered as the top ones.

Based on the results, Finland appears to have the high rate (44.39%), and the nature of this perceptual value can be similar from what Xu (2010) suggested to Czech Republic. To support, Finland is considered to have one of the best education systems in the World; the education system in Finland is completely free, because students are not required to pay school fees, and even their meals are free; many international students intend to study in Finland, because of its historical culture and its beautiful architectures., (International Student Insurance, 2014). Therefore, these are the reason why Finland recorded the highest rate compared with others EU-27 States

Romania has one of the lowest rates which imply that this country and others above EU-27 (28.26%) average do not offer big attractions and educational advantages compared to other nations with higher rates. For instance, Romanian schools do not produce better because of many factors, namely: education in Romania has never been properly financed, and the budget dropped to just 3.6% of GDP in 2012, while the average of EU was 5% of GDP; corruption has also invaded the education system as suborns have become promotional tools for many students; in Romania, student who pass the bachelor level have two options ‘’leave or stay in country to face the poor education system’’ (The Economist in L.C., 2012). According to some reviews, Romania is one the countries with an incredible amount of youths with brilliant minds. But these smart youngest who emigrate for better education, remain abroad and after graduation they decide to find job and living abroad for the rest of their lives (The Economist (2012). So far, these contribute to the reduction of educated people living in the country (See Appendix 6).

4.4.3 Household Income

Graph-8 Annual Percentage growth in total household disposable income in the EU-27 (2002-2009)



Source: Author calculation and analysis based on data from EUROSTA in 2012

Graph 8 shows that in the EU-27 Member States, the difference of income household has been quite high between countries. Most of countries listed with high

percentage are considered as rich countries thus as Austria (13.10%), Cyprus (11.28%), Denmark (15.97%), Finland (13.27%), France (12.41%), Germany (12.53%), Ireland (15.06%), Italy (11.40%), Luxembourg (20.31%), Netherland (10.88%), Sweden (13.22%), United Kingdom (13.80%), Belgium (12.37%), and Spain (9.47%), which are above the EU-27 (9.13%) average. In addition, it is important to note that Luxembourg (20.31%) has the highest rate.

As described on the graph (5 and 6), income household in many countries of EU-27 has been the key issues to relieve poverty, because high income household sub-serve groups of children which are considered as the most affected group of peoples. The reason stands, because children with a standard of living are not easily influenced by external negativities such as: corruptions to achieve some status in the society, social orientations, and others factors related.

Countries such as Czech Republic (4.38%), Estonia (5.25%), Malta (7.14%), and Portugal (7.53%), Romania (2.48%), Poland (3.06%), Latvia (3.71%), Slovenia (3.42%), and Bulgaria (2.55%), are countries with lowest rate, and below EU-27 (9.13%) average. After been through some reviews, the author realized that household income in the EU-27 varies or depend in the country's social policy. For instance, United Kingdom residents enjoy higher household income than most of their European counterparts; but they have higher retirement age, longer working hours, and less state spending on health, thus meaning that the quality of life is below Poland (Poulter, 2011).

''Household in countries such as Poland, France, Spain and Italy all have less material wealth but are considerably happier with life'' (Poulter, 2011).

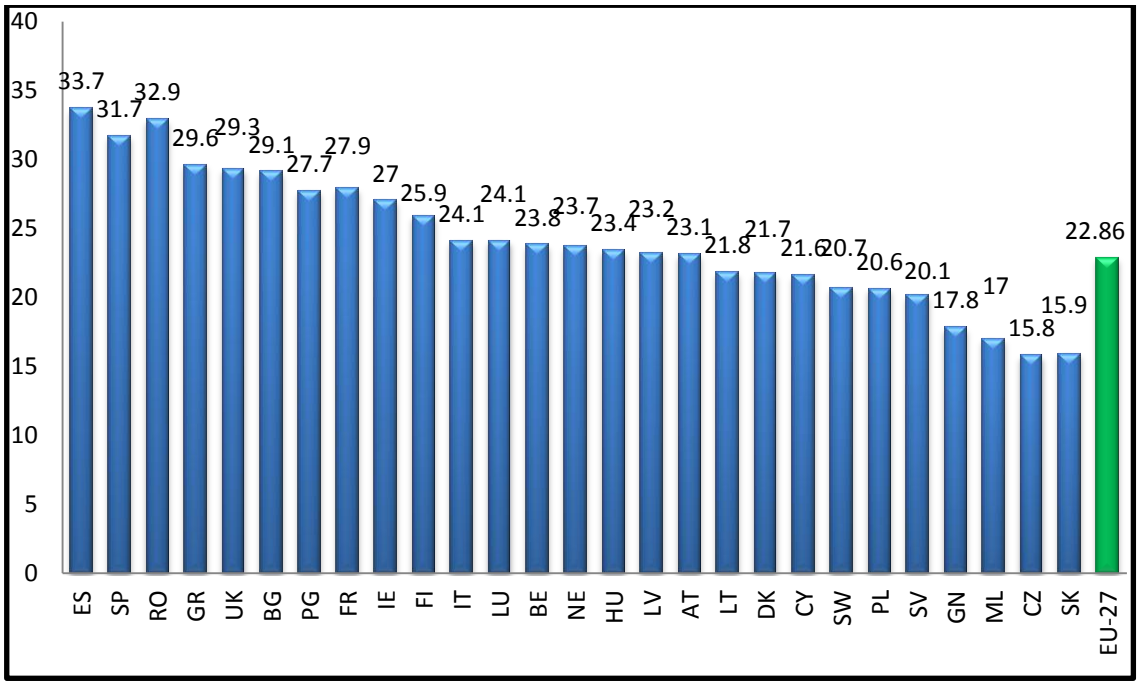
Sustaining the above concepts, income household have been the results of better distribution of income from wealthier people to poorest individuals by the government; based on direct or indirect acquisition, and consequently the compulsory and obligatory contribution of all householders such as income tax, church tax, employment tax, public transfer payments "solidarity, retirement income unemployment income" and others. Considering Luxembourg as the top country in the Graph (8), the country has performed well in many measures of wellbeing as well has shown in ranks among the top countries in several topics in the better life index (OECD, 2013). Because, people living in households spend 23% on average of their gross disposable income on keeping a roof

over their heads, that is above the OECD average of 21% (OECD, 2013). Another factor related is that the net financial wealth per capita is estimate at 57159 USD that is higher than OECD average of 42903 USD (OECD, 2013). Well, based on these values estimated by OECD, it can be proven that the country has as background in terms of household income and wealth (See Appendix 7). Thus, the author concludes that the higher the household expenditure the high is the income, and the higher is the income the high is the standard of living, and consequently the poverty index becomes too low.

So far, Romania is one of the poorest country in the EU-27, according to Daily News (2013), in Romania a little over 50% of household incomes come from salaries, while 23% come from social provisions. In addition, the author suggests that incomes from social support are too low compared to salaries and this can explain why the country has shown a low rate.

4.4.4 Gini Coefficient

Graph-9 Annual average in % of Gini coefficient in the EU-27 States (2002-2009)



Source: Author's calculation and analysis based on data from EU-SILC (2014)

Graph 9 shows the dispersion of income distribution among nationals' residents in the EU-27 Member States. Therefore, some countries in the European Union are richer than others, and consequently the equalities and inequality exist among them. Turn to the points, countries such as Belgium (23.80%), Bulgaria (29.10%), Estonia

(33.66%), Ireland (26.99%), Greece (29.63%), Spain (31.74%), France (27.94%), Italy (24.09%), Latvia (23.19%), Luxembourg (24.09%), Hungary (23.43%), Nederland (23.43%), Austria (23.11%), Romania (32.96%), Portugal (27.70%), Finland (25.98%), United Kingdom (29.34%), are with high inequalities and above the EU-27 (22.86%) average as recorded from 2002 to 2009. In addition, in this group, the high rates are recorded in Estonia, Spain, and Romania; thus showing the difference between the rich and the poor.

Continuing from the previous analysis, countries such as Czech Republic (15.80%), Denmark (21.69%), Germany (17.83%), Cyprus (21.60%), Malta (16.99%), Poland (20.58%), Slovakia (15.91%), Sweden (20.70%), and Slovenia (20.10%), are considered as countries with lower inequalities among residents and below the EU-27 (22.86%) average as illustrated in the figure (9). Among these countries, Czech Republic has the lowest Gini ratio of 15.80% showing a much lower difference between the rich and the poor.

From the the above descriptions, these inequalities between countries, have been the results of lower income per hour mostly from people working as waiters in fast foods, cleaners, and others. Sustaining, *''Cross-country differences in the level of disposable income inequality can be traced back to differences in labour market outcomes, household compositions, concentration of capital income and differences in the progressivity of tax and transfer systems'' (Frederiksen K., 2012)*.

Therefore, policies for redistributing individual incomes remain however at the sole charge of the Europe Union, and the average income growth over the past 25 years has been quite low in EU (Frederiksen K., 2012). Considering countries such as: Belgium, Czech Republic, Estonia, Finland, France, Italy, Slovak Republic and Slovenia, wage dispersion tends to be low but the employment rates in part time job are high, and taxes and transfers are not highly progressive (Frederiksen k., 2012). But countries such as Austria, Germany, Greece, Hungary, Luxembourg, Poland and Spain are characterized as having concentrated labour earnings but with much redistribution at the family level (Frederiksen k., 2012). According to the same author ''Frederiksen k., (2012)''**,** the United Kingdom, Ireland and the Netherlands have high part time employment rates that have driving inequality in labour market outcomes, but taxes and transfers have big impact. In addition, these are the many factors influencing the growth in inequality in the EU-27 (See Appendix 8).

5. REGRESSION ANALYSIS

5.1- **Descriptive statistic of the dataset**

Table-2 Annual average in % of EU-27 of dependent and independent variables (2002-2009)

	Y1	**X1**	**X2**	**X3**	**X4**	**X5**
	P. AT RISK of P.	**UNEMP.**	**EDUCA.**	**H. INCOM.**	**GINI RATIO**	**UV**
Belgium	19.6	7.9	25.4	4.6	23.8	1
Bulgaria	30.8	10.3	25.4	1.7	29.1	1
Czech R.	10.3	6.8	21.1	1.9	15.8	1
Denmark	16.5	4.5	39.7	5.7	21.7	1
Germany	12.4	9.5	28.5	4.8	17.8	1
Estonia	23.1	7.9	31.2	2.6	33.7	1
Ireland	23.9	5.2	40.6	5.7	27	1
Greece	24.3	9.3	25.2	4.1	29.6	1
Spain	23.8	10.6	36.5	4.1	31.7	1
France	19.9	8.8	38.2	4.7	27.9	1
Italy	18.5	7.4	16.8	4.7	24.1	1
Cyprus	17.5	4.3	42.8	4.4	21.6	1
Latvia	24.3	10	21.8	1.3	23.2	1
Lithuania	20.3	8.5	34.2	1.2	21.8	1
Luxembourg	14.3	4.3	33.4	7.1	24.1	1
Hungary	22.9	7	19.1	1.5	23.4	1
Malta	12.3	7.1	18.1	3.1	17	1
Austria	16.1	4.6	21.2	4.9	23.1	1
Poland	22.2	14.6	23.6	3.9	20.6	1
Romania	24.4	7.2	12.4	1.8	32.9	1
Portugal	26	8	17.8	3.9	27.7	1
Slovakia	15	14.6	29.9	2.6	15.9	1
Finland	20	8	44.4	4.9	25.9	1
Slovenia	18.8	5.9	13.9	1.5	20.1	1
Sweden	14.8	6.8	37.1	4.8	20.7	1
Netherland	15.4	4.1	35	3.9	23.7	1
United K.	21.6	5.3	34.7	5.5	29.3	1

Source: Author's calculation based on data from EU-SILC (2008, 2009, and 2014), EUROSAT (2000-2013), EUROSTAT (2013-2014), and EUROSTAT (2012).

Table-3 Descriptive statistic of table-2

Variables	Mean	Median	Standard D. of the variables	Minim.	Maxim.
People-at-risk of Poverty	19.59	19.9	4.86	10.3	30.8
Unemployment	7.72	7.4	2.76	4.1	14.6
Education	28.44	28.5	9.27	12.4	44.4
Household Income	3.74	4.1	1.61	1.2	7.1
Gini coefficient	24.19	23.7	4.94	15.8	33.7

Source: Author analysis based on the results from GRETEL software

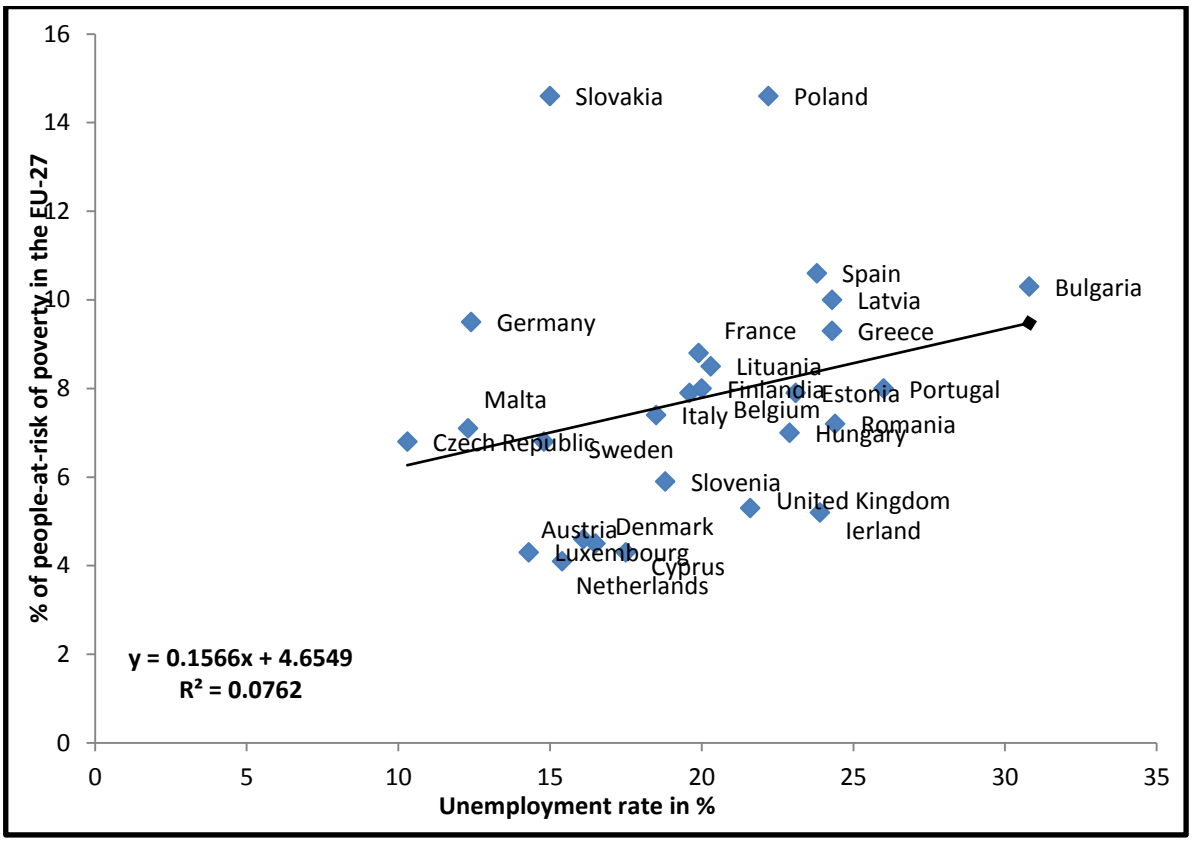
Table 3 shows that variables such as Gini coefficient, Unemployment, have a mean higher than the median. It means that the distribution of these variables has a positive slope, and thus they are far from the cluster of distribution that makes them to show a profound impact on the mean of the data set. In addition, the mean of these variables, offers an advantages of efficiency.

Others variables such as Education and Household Income are almost symmetric, thus meaning that the means and medians are almost the same, and by the nature of descriptive statistics, they are the most preferred data. Table 3 also indicates that the Standard Deviation (S.D.) shows how much the score from the mean deviates. It means if the mean of people-at risk of poverty is 19.59 higher than 4.86 of standard deviation, then it imply that all the values are around 19.59; and if Unemployment is 7.72 less than standard deviation, means that in the data set occurs a wide range of values or the existence of errors. Therefore, most of the variables in the table-3 do not show errors, but the Unemployment variable seems to have many errors.

5.2- Relationship between people-at-risk of poverty in the EU-27 and each independent variable

The simple regression below in graph (10) indicates that unemployment and People living at risk of poverty in the EU-27 are positively correlated because both variables (unemployment, and People living at risk of poverty) are moving in the same direction, meaning that if unemployment increases, the rate of people-at-risk of poverty also increases; and if unemployment decreases, the rate of people at risk of poverty will also decrease.

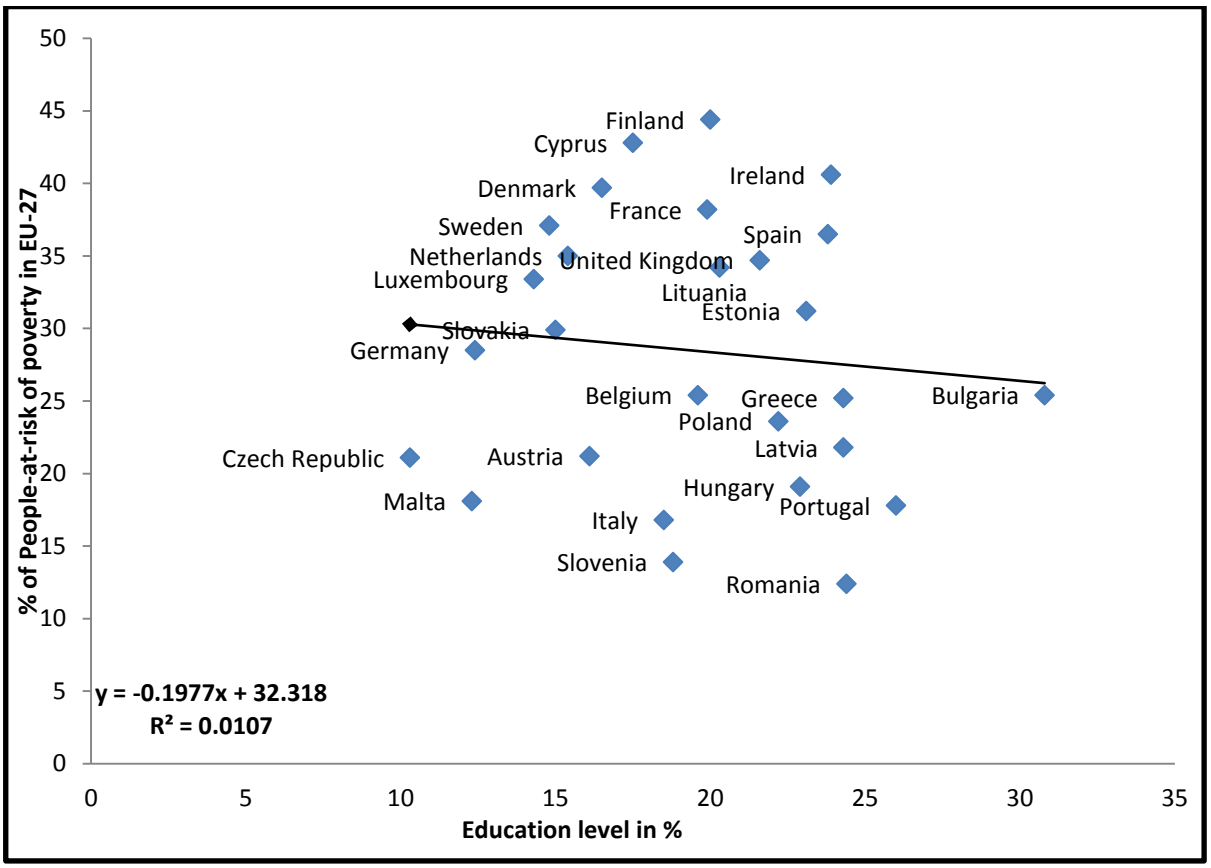
Graph-10 Relationship between people-at-risk of poverty in EU-27 and Unemployment (2002-2009)



Source: Author's calculation based on data from EU-SILC, 2008, 2009, 2014. Eurostat 2013 and EUROSAT (2000-2013)

Observing the results carifully, countries such as Bulgaria (30.8%, 10.3%), Romania (24.4%, 7.2%), Latvia (24.3%, 10%), Spain (23.8%, 10.6%), Poland (22.2%, 14.6%), and Slovakia (15%, 14.6%) have registered hight level of people-at-risk of poverty, it because of increasing in the level of unemployment. The rate of these countries have become too hight by not achieving the EU-27 average of 8.14% (See graph-6), and 15.28% of people living in poverty (See graph-5). Thus meaning that countries above the line such as: Slovenia, Poland, Germany, France, Malta, Greece, Latvia, Lithuania, Spain, Czech Republic, and Bulgaria; for a given unemployment level, poverty has become too high, and for countries bellow the line such as: Netherlands, Austria, Denmark, Slovenia, United Kingdom, Ireland and others in the same category, poverty has become relativelly low.

Graph-11 Relationship between people-at-risk of poverty in EU-27 and Education level (2002-2009)



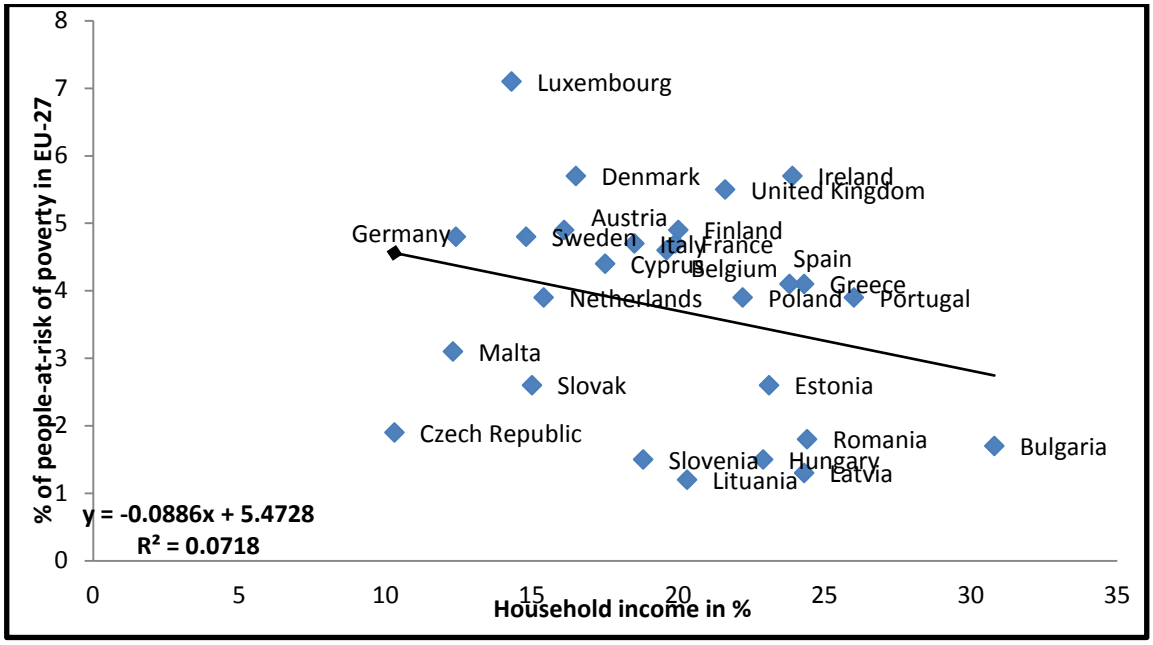
Source: Author's calculation based on data from EU-SILC, 2008, 2009, 2014. Eurostat 2013 and Eurosat (2013-2014)

Graph 11 shows that the regression is negatively correlated as both variables are moving in opposite directions. It means that if education level in the EU-27 increase at some level, then the rate of people-at-risk of poverty in the European Union will decrease and vice-versa. Therefore, in the relationship, countries such as: Ireland, Estonia, Czech Republic, Denmark, Germany, Spain, France, Cyprus, Latvia, Luxembourg, Slovakia, Finland, Sweden, Netherlands, and United Kingdom, are recorded as countries with high level of education and that have positively impacted in the reduction of the rate people-at-risk of poverty.

Among these countries, some have recorded high level of poverty by being above EU-27 average of 15.28% (See graph-5) and below EU-27 average of 28.26% (See graph-7). The countries are Czech Republic (21.1% of Education and 10.3% of Poverty), Germany (28.5% of Education and 12.4% of poverty), Luxembourg (33.4% of

Education and 14.3% of Poverty), Slovakia (29.9% of Education and 15% of poverty), and Sweden (37.1% of Education and 14.8% of Poverty). Based on these results, the author suggests that this phenomenon can be explained by the independent variable Gini ratio by the fact that education is a way to earn a better income (see graph-4.4.4).

Graph-12 Relationship between people-at-risk of poverty in EU-27 and Household income (% 2002-2009)



Source: Author's calculation based on data from EU-SILC, 2008, 2009, 2014. Eurostat (2013), and EUROSTA in 2012

Graph 12 shows a negative relationship between People-at-risk of poverty and Household income, meaning that countries above the line have high level of Household income, and thus meaning that the number of people living at-risk of poverty has decreased. While countries below the lines have recorded lower level of household income and consequently the number of people living-at-risk of poverty in these countries is high. The issues stand because the EU-27 average of poverty from 2002 to 2009 is 15.28% and most of countries are above this level, where Luxembourg (14.3% people at risk of poverty, and with high income household of 7.1%) has high rate, and Czech Republic (10.3% of poverty and 1.9% of household income as one of the lowest in the list of countries).

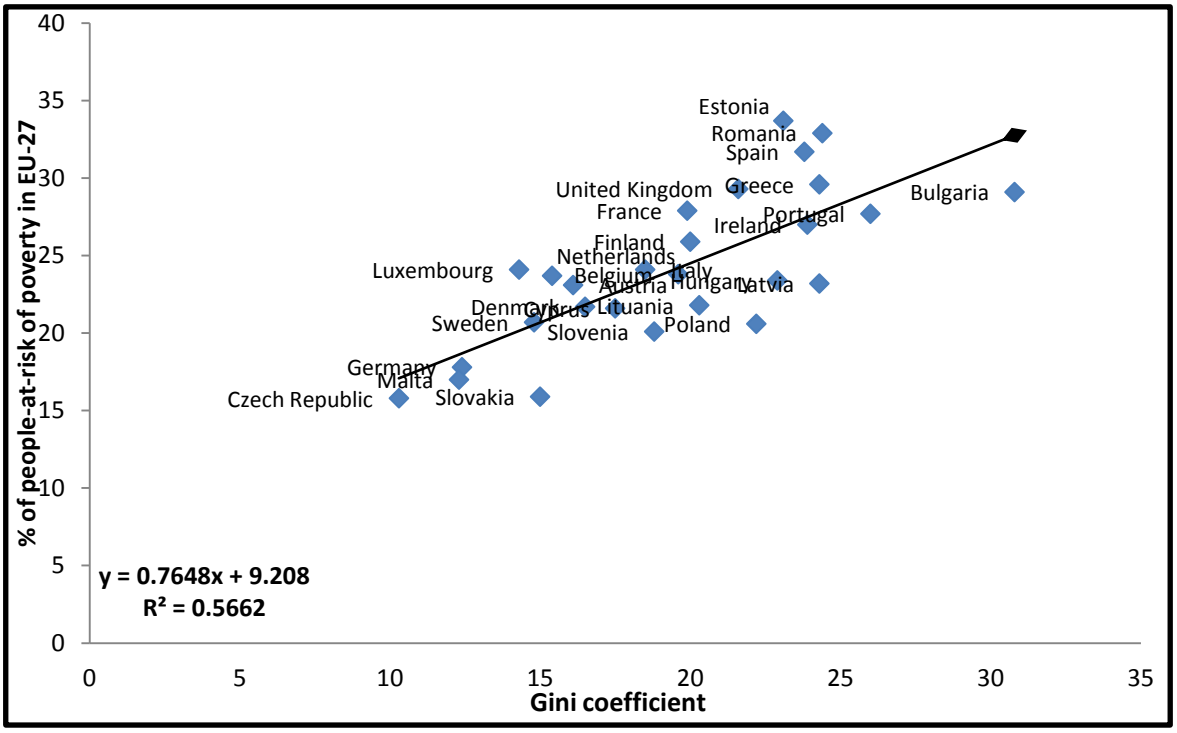
Well, countries such as Denmark (5.7% of household income and 16.5% of poverty), Ireland (5.7% of household income and 23.5% of poverty), and United

Kingdom (5.5% of household income and 21.6% of poverty), the relations are inverse because if poverty increase, this means that household income decreases.

There are many countries in the graph for which the income household is low and with high people at risk of poverty such as Romania, Bulgaria, Estonia, Greece, Hungary, Poland, Latvia, Lithuania, and Portugal. Well, based on EU-average, countries up to 20% of people at risk of poverty are considered to be at high risk.

Graph 13 illustrates a positive correlation between both variables (Gini ratio and people at risk of poverty) moving in the same direction. It means that if Gini increases, the poverty will increase as well. Countries above the line such as: Estonia, Bulgaria, Portugal, Greece, Romania, and Spain; are countries which rates of poverty have increased as the result of increasing in Gini coefficients. Among them, Estonia (33.7% of Gini and 23.1% of poverty) was recorded as the highest, and Czech Republic as a country with lowest Gini coefficient of 15.8% and with lowest poverty rate of 10.3%. Countries below the line are characterized as having low inequality and with lower people living at-risk of poverty.

Graph-13 Relationship between people-at-risk of poverty in EU-27 and Gini coefficient (2002-2009)



Source: Author's calculation based on data from EU-SILC, 2008, 2009, 2014. Eurostat 2013 and EU-SILC (2014)

The correlation coefficient of the regression (See graph-13) shows that both variables are positively and highly correlated, thus showing almost the same variability once considering R^2 equal to 0.5662 that correspond to 57% of variability's while remaining 43.38% to be explained by error terms. These results indicate that the increases in Gini ratios have led to the increase in the level of people living at-risk of poverty in the EU-27 Member states.

5.3- Estimation of the original econometric model

People-at-risk of poverty in EU-27i = γ0+ γ1 *(Unemployment)i+ γ2*(Household income)i+ γ3 *(Education)i +γ4 *(Gini ratio)i +ui

Table-4 Model-1: OLS, using observations 1-27 Dependent variable: People-at-risk of poverty

	Coefficient	**S.td. Error**	**T-ratio**	**P-value**
Constant	0.312039	3.75951	0.083	0.9346
Unemployment	0.435075	0.209734	2.0744	0.04994**
Education	-0.00807212	0.0689774	-0.117	0.9079
House Income	-0.71591	0.41857	-1.7104	0.10126
Gini Coefficient	0.778164	0.110076	7.0693	<0.00001***

Mean dependent var	19.59259	S.D. dependent var	4.859798
Sum squared resid	166.8498	S.E. of regression	2.753921
R-squared	0.728284	Adjusted R-squared	0.678881
F(4,22)	14.7417	P-value (F)	5.37E-06
Log-likelihood	-62.89831	Akaike criterion	135.7966
Schwaz criterion	142.2758	Hannan-Quinn	137.7232

Source: Author analysis based on the results of GRETL software

OBS: The stars (***) indicates that the coefficients estimated are statistically significant, and statistically explain the model.

Table-5: Multicollinearity diagnostic using, variables inflation factors (VIF) from the model-1

Independent variables	**Variable Inflation Factor (VIF)**
Unemployment	1.146
Education	1.402
Household Income	1.551
Gini Coefficient	1.013

Source: Author's analysis based on the results of the GRETL software.

Based on the results provided on Table (5), the VIF's are bellow 10.0, condition number of 9.41, and determinant of 3.14. In addition, the R-square (73%) of the regression is medium, and thus these values indicate the non existence of highly correlated variables in the model.

Table-6 Analysis of variance (ANOVA) using observation, 1-27 from model-1

	Sum of square	**Degree of Freedom**	**Mean Square**
Regression	447.207	4	111.802
Residual	166.85	22	7.58403
Total	614.059	26	23.6176

Source: Author's analysis based on the results from GRETL software

$\mathbf{R^2}$ = 444.209/614.059 = 0.728284≈0.73; thus if we multiply by 100 it will be 73% of regression coefficient.

F (4, 22) = 111.802/7.58408 = 14.7417 [P-Value 5.37e-006] where 14.7417 is the F-statistic

Statistical significance of the parameters

Considering table (4), the first assumption prevails because the T-statistics of Unemployment and Gini Coefficient, are higher than T-critical (1.70562), this means that the estimated coefficients of Unemployment (2.0744), and Gini (7.0693), are statically significant and consequently the null hypothesis (H_0) is rejected and the alternative hypothesis (H_1) is accepted. Both significant variables show that people-at-risk of poverty in EU-27 are highly affected by these independent variables. But variables such as Education and Household Income, the T- ratio was too low, and thus the null hypothesis could not be rejected.

From the analysis of covariance ‘‘ANOVA’’ on Table (6), here the author computed F-test using 0.1 (10%) level of significance with selected degree of freedom (df) of F (4, 22), where F-critical is equal to 2.21927, and F-statistics is equal to 14.7417; again the author testified that F-statistic (14.7417) is higher than F-critical (2.21927). Because of this, once again the null hypothesis (H_0) is rejected and consequently the alternative hypothesis (H_1) is accepted, meaning that the overall variables in question have a significant impact on the ‘‘dependent variables’’ People-at-risk of poverty in the EU-27 Member States.

5.4- Estimation of the modified econometric model

People-at-risk of poverty in EU-27i= $\gamma 0 + \gamma 1 * (\text{Unemployment})_i + \gamma 2 * (\text{Gini coefficient})i + ui$

To run the second model, the author had to exclude two insignificant variables ‘Education and Household Income’ and thus continue with two significant variables ‘Unemployment and Gini Coefficient’. The reason for excluding these variables from the model, was because the P-values were found as lower than 0.05 (See table-4). Therefore, it was not necessary to use assumptions to run the multiple regression of the second model.

Table-7 Model-2: OLS, using observations 1-27. Dependent variable: People-at-risk of poverty

	Coefficient	**Std. Error**	**T-ratio**	**P-value**
Constant	-3.4041	3.3393	-1.0.19	0.3182
Unemployment	0.585046	0.205444	2.848	0.0089***
Gini Coefficient	0.763822	0.114653	6.662	6.85e-07***

Mean dependent. variable	19.59259	S.D. dependent variable	4.859798
Sum square residual	199.0952	S.E. of regression	2.880214
R-squared residual	0.675772	Adjusted R-squared	0.648753
F (2,24)	25.01095	P-value (F)	1.35E-06
Log-likelihood	-65.28361	Akaike criterion	136.5672
Schwarz criterion	140.4547	Hannan-Quinn	137.7232

Table-8 Tests of heteroskedasticity using, white, and Breush-Pagan test

White test (H1)	White test for square only H0	Breusch-Pagan test (H0)
H0: heteroskedasticity not present	H0: heteroskedasticity not present	H0: heteroskedasticity not present
Test statistic: LM = 4.38952	Test statistic: LM = 3.7261	Test statistic: LM = 1.49431
P-value = P (Chi-square (5) > 4.38952) = 0.494801	P-value = P (Chi-square (4) > 3.7261) = 0.444341	P-value = P (Chi-square (2) > 1.49431) = 0.473711

Table-9 Auxiliary regression for the Ramsey's reset test specification.Dependent variable: People at risk of poverty

	Coefficient	**Std. Error**	**T-ratio**	**P-value**
Constant	60.8765	94.1156	0.6468	0.5244
Unemployment	-3.89302	5.64905	-0.6891	0.4979
Gini coefficient	-5.01903	7.34307	-0.6835	0.5014
$Yahat^2$	0.463427	0.491564	0.9428	0.356
$Yhat^2$	0.0088596	0.00818717	-1.082	0.2909

	Squared and cubes
Test statistic	Test statistic= 2.742091
P-value	P (F(2,22) > 2.74209) = 0.0864

Analysing, Table 7 shows that T-critical (1.31497) with 0.1 (10%) level of significance and 26 (df), is less than Unemployment variable (2.848), and T-critical (1.31497) also is less than Gini coefficient variable (6.662). From these results the alternative hypothesis is accepted as both variables are statistically significant.

Considering Table (8), the results from White-test (P-value = 0.494801), and Bresch-Pagan test (P-value = 0.473711), shows that there is no occurrence of heterokedasticity from the model-2 because the Chi-square was smaller than P-value. Thus, the overall test could not reject the null hypothesis (H0); thus meaning that the variances of errors in the selected model are not constant.

Also Table (9) indicates that the P-value (0.0864) as shown from Ramsey's Test, is higher than the standardized (0.05), which means that the null hypothesis (H0) was not rejected. It means that linear form of the model is adequate, or in other words, the model is correctly specified.

Table-10 Analysis of variance (ANOVA) table using observation, 1-27 from model-2

	Sum of squares	df	Mean square
Regression	414.963	2	207.482
Residuals	199.095	24	8.29563
Total	614.059	26	23.6176

Source: Author's analysis based on EU statistics data

Note: $\mathbf{R^2}$ = 414.963/614.059 = 0.675772≈0.68; thus if we multiply by 100 it will be 78% of regression coefficient.

F (2, 24) = 207.482/8.29563 = 25.011 [P-Value 1.35e-006] where 25.011 is the F-statistic

The Analysis of Covariance of Table-10 (ANOVA-Table) determines if all the regressions are statistically significant based on hypothesis tests. Based on it, F-critical was found (2.53833) with selected degree of freedom (df) F (2, 24). Therefore, F-critical is less than the F-statistics (25.011) obtained from the results of the table 10. Once again the null hypothesis (H0) was rejected conforming high significance of the whole equation.

Interpretation of the estimated parameters

Based on classical linear regression model used for interpretation of multiple regression analysis, here the author decided to use the Elasticity concepts to measure the responsiveness of independent variables (Unemployment and Gini Coefficient) to the change with the dependent variable (People-at-risk of poverty in the EU-27 Member States).

The above concept stands because elasticity is an important concept to see the impact of these variables in each EU27 country. Based on Table (7), the extraction of the econometrics model for the computation of Elasticity, the author obtained: $Yi = -3.40410 + 0.58504X_{1i} + 0.763822X_{2i}$, which using the Elasticity formula, the results of X_1 (7.72) and X_2 (24.19) were obtained from their respective means as listed on Table (3) of descriptive statistics.

Computing, Yi ‘‘Theoretical’’ was 19.59. Elasticity for the variable X_1 (Unemployment) was 0.23 (23%), and the Elasticity for the variable X_2 (Gini Coefficient) was 0.94 (94%) See table (11). This indicates that if Unemployment increased by 1% then author expect people-at-risk of poverty in EU-27 to increase by 23%, while if Gini Coefficient increase by 1% then author expect people-at-risk of poverty in the EU-27 to increase by 94%. Also this means that the variable Gini Coefficient has the biggest impact on poverty in the EU-27.

Table-11 Computation of elasticity

Variables	**Parameters estimated**	**Means and Theoretical**	**Elasticity**	**Impact on Y_i**
Y_i	-3.4041	19.59 (Theoretical)	-	-
x_{1i}	0.3585	7.72 (Mean)	0.23→ (23%)	Big
x_{2i}	0.76382	24.19 (Mean)	0.94 → (94%)	Biggest

Source: Author design based on the results from the computation

Note: X_{1i} is Unemployment, X_{2i} is Gini coefficient, and Yi is considered as a theoretical value.

6. DISCUSSION

From the achievements of the analysis and results using descriptive analysis (See chapter-4.2, 4.3, 4.4, and 5.2), multiple regression analysis (See chapter-5), test statistics, and the elasticity (See table-11), in order to find the qualitative results, using one dependent variable (people-at-risk of poverty in the EU-27) and four independent variables (Unemployment, Education, Household Income, and Gini coefficient). Two of the variables namely Education and Household Income were insignificant, but variables such as Unemployment and Gini coefficient are statistically significant. From economic point of view, the insignificant variables had a role to play in the reduction of poverty (See Graph-11 and Graph-10). Their contribution stands because a person with a high level of education has a higher probability to have high income, and from countries such as Luxembourg, Sweden, Germany and others where the income household is high, this variable ‘‘Household Income” contributed much because of policies related to the non-change in taxes system and benefits, National insurance, disposable income and others important aspects. So, indirectly these variables can help people to be out of poverty.

Based on the results from MODEL 1 and MODEL 2 using test statistics and ANOVA (Analysis of Covariances) tables, using 10% degree of significance between Unemployment and Gini coefficient, the author suggests that both variables are the cause of the increase of the rate of people living at-risk-of poverty in the Union. Thus, the rate of high Unemployment has been the cause of growth of the number of long-term unemployed peoples, which are not looking for a job and that consequently are not requiring for the reduction of real wage, and thus pushing the inflation rate to increase to a certain level. It means that the income of an individual, organization or even in countries (real income), will maintain fixed and then the income inequality will rise. Sustaining the facts existing in the EU-27, high unemployment has affected much those facing long-term unemployment, which they are going to lose their professional skills.

These unemployed tend to earn less money even having a new job, increasing in their poor health condition and others factors. Negatively these issues lead to increase in certain level the community crime and violence. To support, some evidences are provided on de descriptions of Graph (12) and Graph (10).

Based on the above concepts, the unemployment issues in the EU-27 have become a very important to economic policies regarding the reduction of people living

at-risk-of poverty. But unfortunately, due to the persistent influence of EU-27 institutions, the unemployment may keep to increasing. Turn to the points, there are many factors that can explain the causes of Unemployment in countries of EU-27. For instance, countries such as: Portugal, Romania, Latvia, Bulgaria, Poland, and others poorest countries listed in the above graphs, are facing huge problems. These problems are concerned to labour marker rigidities, barriers to labour mobility, wage bargaining, high taxation on employment and others factors that directly or indirectly are pushing people to be unemployed. Thus, the differences among EU-27 countries are huge, persistent, and also real facts.

To continue, countries in EU-27 showing high Gini coefficient, means that the level of inequality has been too high and thus the results are the cause of increase in number of people living at-risk-of poverty. These countries are Bulgaria, Portugal, Estonia, Romania, and Latvia. (See graph-13 and its evidences). Continuing, poorer countries in the EU-27 can create negative impacts in other rich countries, because of increasing in number of immigrants, reducing job opportunities to indigenous people, culture evasions, diseases, evoking poverty, population growth in geometric ratio, increase in government budget for social transfer, and others factors related.

Considering the final model (MODEL 1), the coefficient of determination R^2 of 67.5% tell us that both variables (Unemployment and Gini ratio) are highly correlated, and thus they can measure the degree of variability's existing among countries being at risk of poverty in the EU-27.

Measuring the overall impact existing between the significant variables mentioned above, Gini Coefficient has been the main variable to justify why in poorest countries of EU-27 poverty has gone too high, achieving up to 94% (Gini Coefficient) against 23%(Unemployment) in the elasticity (See the interpretation of parameters estimated). Thus, once again it testified that the variable Gini Coefficient has been the problem in increase of poverty in the EU-27.

7. CONCLUSION AND RECOMMENDATION

7.1- Conclusion

The major objective of this Diploma thesis was to analyse the causes and effects of people living-at-risk of poverty in the European Union Twenty-Seven Member States (EU-27), and consequently the aim was to quantify the, relationship between people-at-risk of poverty as a measure of the poverty level in the EU-27, and four independent variables (Unemployment, Education, Household Income, and Gini ratio) that were selected as relevant predictors of poverty.

Using descriptive analysis of EU-27 including all the variables and items of material deprivation in this study, author concluded that in the EU-27 some countries have always appeared at the top compared to other countries as the poorest and the richest. Countries such as: Hungary, Bulgaria**,** and Latvia, are the top ones in the level of material needs (See Graph-4); Bulgaria, Romania, Portugal, Latvia, and Hungary, are the top ones about peoples living at risk of poverty; (See Graph-5); Poland, Slovakia, and Bulgaria, are countries with highest rate of unemployment; Estonia, Greece, Spain, France, Romania, and Portugal, are countries where the rate of Gini Coefficient is to high; Slovakia, Romania, Portugal, Italy, and Malta, are countries with lowest rate in Education level of people attending the Universities; And countries which the rate of household income is too low and below level of EU-27 average are: Bulgaria, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovenia, and Romania.

From the above conclusion, the author suggested to classify them in three respective categories: In the first category, are Bulgaria, second category, (Hungary, Latvia, Romania, Portugal, and Slovenia), and in the third category is Poland. This is because of their highest percentage rates in all variables as illustrated in the graphs (4, 5, 6, 7, 8, and 9).

From the descriptive statistics point overview (See Table-3), the results show that some variables such as Unemployment and Gini Coefficient have higher means than the median, which mean that these variables have positive slopes while the Standard deviation is high in variables such as Education, Gini coefficient, and People-at-risk o poverty, which show the degree of dispersion from the mean.

Based on the results of simple regressions (See chapter-5.2), there are two independent variables (Unemployment and Gini Coefficient) positively correlated with

dependent variable (People-at-risk of poverty in the EU-27), and two independent variables (Education and Household Income) are negatively correlated with the dependent variable. Economically, the positive aspect indicates that those countries with higher rates of Unemployed people are facing higher poverty, and it is the same to the Graph (13) of Gini Coefficient. In addition, the variable Gini Coefficient in this study does measure the overall income that any particular country from EU-27 produces. Based on it, after many test and observations of the results, the variables positively correlated as it was mentioned on previous paragraphs, are the one which are creating huge impact in poverty in the EU-27.

Conceptually, Household Income is one of the main factors of increase of poverty in the EU-27 Member States because it is only with income that the European Union Citizens can pursue their needs and wants, and thus consequently running out of poverty and creating a standard of living in the region. The concept poverty in EU-27 has been relative once considering cases where countries (e.g. Sweden) apparently have high incomes without a good standard of living, and there are countries (e.g. Czech Republic) with low incomes but with better standard of living. Poverty in EU-27 depend on the country's policies especially the social policies (unemployment, retired, minorities, special employees, taxation charge from employees, special jeopardize peoples and others). Continuing, the increase in material deprivation in EU-27 has been the source of lack of income in family household.

Furthermore, the author concludes that to measure material deprivation and income poverty in EU-27, it is necessary to consider variables which can influence poverty such as work intensity of household, frequent activities statues, household composition, age, gender, and education, health problems, and housing tenure statues. These variables can easily evoke poverty if proper country policies are not applied. Shortly, all is about demographic variables, the number of employees, education, and health care. Finally, was concluded that the overalls results are combined with the expectations.

7.2- Recommendation

Based on the analysis and results provided during this study, the author recommends that to curb poverty and increase standard of living in the EU-27 Member States, the Union has to:

1. Create large sustainable programs at supranational, regional and local level such as microfinance, supports in agrarian sector, environmental issues (reduction of pollution by increasing green spaces, paved roads because of increase of illness that may be too expensive to poorest individuals) , housing for health to make the local indigenous poorest people to increase their health, and using mechanism to inform those illiterates groups of people to grow their families based on arithmetic ratios rather than geometric ratios. This is because of increase children in household and with one household members working with low salary to sustain them.
2. Giving opportunities for international, national, and local companies by using economics tools to motivate them, and that consequently their contribution will increase the number of employees, generating income, consumption, economic growth, reduction of materials needs, and increase in the standard of living.
3. Creating systems for better distribution of income from wealthy people to poorest individuals.
4. Improve the education systems by building more University Campus, Secondary schools and primary schools, increasing educational budgets
5. Alleviating people's taxation to motivate them to work instead of increasing taxation and pushing different kind of unemployed in the economy.

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9. APPENDICES

Appendix-1 Deprivation of Items in % in the EU-27 Member States (2009)

0	H: Ar	H. Car	H. Unu. Ex	Inadeq. W	Comp. & In	H. Worm	H. Holiday	H. Meat	A. Clothes	A. Shoes	Drink/ me	A. leisure	A. P. money
BE	8	7	24	5	5	18	27	5	7	1	10	14	11
BG	34	26	62	65	23	80	63	40	57	12	47	48	54
CZ	5	10	38	5	6	49	41	11	5	1	3	7	12
DK	4	4	19	1	1	8	8	1	4	1	1	3	3
DE	5	5	31	5	2	18	22	8	6	2	23	19	14
EE	13	15	30	2	6	45	54	9	10	2	10	9	12
IE	13	8	46	4	3	15	36	2	4	2	10	7	12
EL	27	8	30	17	11	47	50	11	11	1	7	22	11
ES	9	4	33	7	4	36	40	2	3	1	7	10	11
FR	10	3	31	5	3	32	30	7	7	4	6	11	14
IT	11	2	30	9	4	3	39	6	7	1	9	16	17
CY	20	1	41	22	2	47	45	5	6	1	3	7	6
LV	20	27	73	16	8	65	62	24	34	11	26	38	35
LT	8	15	53	25	8	46	39	21	25	2	26	39	35
LU	5	3	27	1	1	16	17	1	5	2	8	8	9
HU	22	21	76	10	9	57	67	27	32	3	40	35	37
MT	8	2	29	12	1	48	65	11	16	1	22	18	16
NL	3	0	14	1	0	14	9	1	1	1	2	6	5
AT	7	5	23	2	3	11	23	10	6	1	7	15	13
PL	14	15	52	17	10	39	64	18	16	3	15	26	22
PT	8	11	27	31	8	57	66	5	23	7	25	27	28
RO	25	43	41	20	17	68	76	23	34	10	57	58	53
SI	18	3	40	4	3	36	31	10	13	2	6	17	10
SK	14	19	37	4	10	42	56	25	10	3	9	12	20
FI	10	5	24	1	1	9	13	2	5	0	1	2	2
SE	6	2	17	1	0	5	10	2	2	1	8	4	5
UK	4	4	30	6	3	13	25	4	6	2	10	16	17
EU-27	12	9	35	10	5	31	38	10	12	3	13	18	17

Source: EU-SILC, 2009. H=Household & A=Adult

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Appendix-2 List of Countries abbreviation in the EU-27

EU-27	Country Name
DK	Denmark
GN	Germany
ES	Estonia
IE	Ireland
GR	Greece
SP	Spain
FR	France
IT	Italy
CY	Cyprus
LV	Latvia
LT	Lithuania
LU	Luxemburg
HU	Hungary
ML	Malta
AT	Austria
PL	Poland
RO	Romania
PG	Portugal
SK	Slovakia
FI	Finland
SV	Slovenia
SW	Sweden
NE	Nederland
UK	United Kingdom

Source: Author own description based on EU-27 countries abbreviations

Appendix-3 Member States of EU-27 and Candidates Countries of EU

Source: European Union (2013)

Appendix-4 People at risk of poverty (%) in EU-27 from 2002 to 2009

	2002	2003	2004	2005	2006	2007	2008	2009
UK	28	29	N/V	24	23.7	22.8	23.2	22
BE	N/V	29.1	21	22.6	21.5	21.6	20.8	20.2
BG	17	N/V	16	N/V	61.3	60.7	44.8	46.2
CZ	N/V	N/V	N/V	19.6	18	15.8	15.3	14
DK	N/V	31	17	17.2	16.7	16.8	16.3	17.4
GN	N/V	N/V	N/V	18.4	20.2	20.6	20.1	20
ES	25	25	20	25.9	22	22	21.8	23.4
IE	N/V	30.9	40	25	23.3	23.1	23.7	25.7
GR	N/V	23.7	28	29.4	29.3	28.3	28.1	27.6
SP	22	22	30	23.4	23.3	23.1	22.9	23.4
FR	26	24	15	18.9	18.8	19	18.6	18.4
IT	N/V	N/V	21	25	25.9	26.1	25.3	24.7
CY	N/V	20	N/V	25.3	25.4	25.2	22.2	22.2
LV	N/V	N/V	N/V	45.8	41.4	36	33.8	37.4
LT	N/V	N/V	N/V	41	35.9	28.7	27.6	29.5
LU	N/V	23	8	17.3	16.5	15.9	15.5	17.8
HU	15	17	N/V	32.1	31.4	29.4	28.2	29.9
ML	N/V	N/V	N/V	20.6	19	19.1	19.5	20.2
NL	22	23	N/V	16.7	16	15.7	14.9	15.1
AT	N/V	24.6	17	16.8	17.8	16.7	18.6	17
PL	N/V	N/V	N/V	45.3	39.5	34.4	30.5	27.8
RO	23	22	17	n/v	n/v	45.9	44.2	43.1
PG	26	26	29	26.1	25	25	26	24.9
SK	N/V	N/V	N/V	32	26.7	21.3	20.6	19.6
FI	28	28	18	17.2	17.2	17.4	17.4	16.9
SW	29	N/V	14	14.4	16.3	13.9	14.9	15.9
SV	16	16	N/V	25.9	24.2	23.1	23	22
EU-27	N/V	N/V	N/V	26	25	24.5	23.6	23.1

Source: EU-SILC, 2008, 2009, 2014

Appendix-5 Unemployment rate (%) in EU-27 from 2002 to 2009

	2002	2003	2004	2005	2006	2007	2008	2009
BE	7.5	8.2	8.4	8.5	8.3	7.9	6.9	7.9
BG	18.2	13.7	12.1	10.1	9	7.9	6.1	5.6
CZ	7.3	7.8	8.3	7.9	7.1	6	4.6	5.1
DK	4.8	5.4	5.5	4.8	3.9	4	3.4	4.5
GN	8.7	9.8	10.5	11.3	10.3	9.4	8.1	7.5
ES	10.3	10.1	9.7	7.9	5.9	5.1	4.4	9.9
IE	4.5	4.6	4.5	4.4	4.5	4.5	5	9.5
GR	10.3	9.7	10.5	9.9	8.9	8.7	7.5	8.9
SP	11.4	11.4	10.9	9.2	8.5	8.2	9	15.9
FR	8.3	8.9	9.3	9.3	9.2	8.8	7.6	8.6
IT	8.5	8.4	8	7.7	6.8	6.2	6.5	7.2
CY	3.5	4.1	4.8	5.3	4.6	4.2	4.2	4
LA	12.8	11.3	11.2	9.6	7.3	6.9	6.6	14.3
LT	13.8	12.4	11.3	8	5.2	4.1	3.6	9.4
LU	2.6	3.8	5	4.6	4.2	4.5	4.3	5.4
HU	5.6	5.8	6.1	7.2	7.5	7.1	7.7	8.7
MT	7.4	7.7	7.2	7.3	6.9	7.3	6.2	6.4
NL	3.1	4.2	5.1	5.3	4.4	4	3.2	3.1
AU	4.2	4.3	4.9	5.2	4.8	4.4	4.1	4.3
PL	20	19.8	19.1	17.9	13.9	11.3	7.7	7.2
PG	5.7	7.1	7.5	8.8	8.8	9.2	8.4	9.3
SV	6.3	6.7	6.3	6.5	6	5.5	4.8	4.7
SK	18.8	17.7	18.4	16.4	13.5	11.7	10.4	9.6
FL	9.1	9	8.8	8.4	7.7	7.2	6.4	7.1
SE	6	6.6	7.4	7.7	7.1	6.6	6	6.8
UK	5	4.7	4.8	5.4	5.3	5.5	5.1	6.7
RO	8.6	7	8.1	7.2	7.3	6.4	5.8	6.9
EU-27	6.9	9.1	9.3	9	8.3	7.6	6.9	8

Source: EUROSAT (2000-2013)

Appendix-6 Percentage (%) of total population aged 30 to 34 years who successfully finished University (2002-2009)

	2002	2003	2004	2005	2006	2007	2008	2009
AU	20	21	21	20.5	20.2	21	22.2	23.5
BG	23.2	23.6	25.2	24.9	25.3	26	27.1	27.9
CY	36	39.9	41	40.8	46.1	46.2	47.1	45
CZ	12.6	12.6	12.7	24.9	25.3	26	27.1	27.9
DK	34.2	38.2	41.4	43.1	43	38.1	39.2	40.7
ES	28.1	27.6	27.4	30.6	32.5	33.3	34.1	35.9
FL	41.2	41.7	43.4	43.7	46.2	47.3	45.7	45.9
FR	31.5	34.9	35.7	37.7	39.7	41.4	41.2	43.2
GE	24.2	25.1	26.8	26.1	25.8	26.5	27.7	29.4
GR	23.4	22.8	24.9	25.3	26.7	26.2	25.6	26.5
HU	14.4	16.3	18.5	17.9	19	20.1	22.4	23.9
IR	32	35.1	38.6	39.2	41.3	43.3	46.1	48.9
IT	13.1	13.9	15.6	17	17.7	18.6	19.2	19
LV	17.3	18.3	18.5	18.5	19.2	25.6	27	30.1
LT	23.4	25.2	31.1	37.9	39.4	36.4	39.9	40.4
LU	23.6	17.3	31.4	37.6	35.5	35.3	39.8	46.6
ML	9.3	13.7	17.6	18.3	21.6	21.5	21.1	21.3
NE	28.6	31.7	33.6	34.9	35.8	36.4	40.8	40.5
PL	14.4	17.2	20.4	22.7	24.7	27	29.7	32.8
PT	13	14.9	16.5	16.7	18.4	19.8	21.6	21.1
SP	33.3	34	35.9	38.6	31.8	39.5	39.8	39.4
RO	9.1	8.9	10.3	11.4	12.4	13.9	16	16.8
SL	20.7	23.6	25.1	24.6	28.1	31	30.9	31.6
SV	10.5	11.5	12.9	14.3	14.4	14.8	15.8	17.6
SW	28.3	31	33.9	37.6	39.5	41	42	43.9
UK	21.5	31.5	33.6	34.6	36.5	38.5	39.7	41.5
BL	23.2	23.6	25.2	24.9	25.3	26	27.1	27.9
EU-27	22.59	24.26	26.6	28.3	29.31	30.39	31.7	32.93

Source: Eurosat (2013-2014)

Appendix-7 Household income in EU-27 from 2002 to 2009 (in mill of Euro)

	2002	2003	2004	2005	2006	2007	2008	2009
AU	4	4.1	3.8	18.00	17.85	18.16	19.01	19.87
BG	4.3	4.3	3.9	N/V	1.38	1.48	2.17	2.83
CY	4	4.1	4.2	13.16	14.54	16.01	16.77	17.43
CZ	2.1	2.1	3	4.23	4.80	5.42	6.07	7.30
DK	3.5	3.6	3.4	22.12	22.66	23.34	24.16	24.93
ES	6.1	5.9	7.2	2.98	3.64	4.45	5.55	6.21
FL	3.7	3.6	3.5	17.50	18.34	18.70	19.82	20.96
FR	3.9	3.8	4.2	15.95	16.20	16.44	18.98	19.76
GE	4.1	3.5	5.2	16.39	15.66	17.78	18.98	18.59
GR	6.4	6.4	5.9	9.42	9.85	10.2	10.8	11.50
HU	3	3.3	3	3.45	3.85	3.94	4.4	4.74
IR	4.6	4.9	4.9	18.80	19.76	22.07	22.99	22.45
IT	5	5.3	5.7	14.35	14.52	15.01	15.64	15.64
LV	1.1	2	2.1	2.20	2.53	3.35	4.83	5.474
LT	1	1.9	2	2.06	2.53	3.28	4.17	4.81
LU	4	4.1	3.9	28.40	29.48	29.89	30.92	31.76
ML	3	3.7	5	8.05	8.75	9.1	9.56	9.93
NE	4	4	4.1	17.00	1,.26	18.24	19.52	20.16
PL	2	2.1	2	2.53	3.11	3.50	4.155	5.10
PT	7.3	7.4	7	7.20	7.31	7.57	8.14	8.28
SP	5.1	5.1	5.2	10.60	11.48	12.04	12.95	13.30
RO	4.7	4.6	4.8	N/V	N/V	1.657	1.95	2.16
SL	3.1	3.1	3	8.80	9.32	9.91	10.89	11.86
SV	2.3	2	2.5	2.83	3.31	3.97	4.79	5.67
SW	3.3	3	3.3	17.50	17.99	18.85	20.57	21.25
UK	5.5	5.3	5.4	18.49	19.51	21.01	18.92	16.26
BL	3.8	3.2	3.3	16.58	17.21	17.57	17.99	19.31
EU-27	3.88	3.94	4.13	11.05	10.95	12.33	13.14	13.61

Sources: EUROSTA in 2012

Appendix-8 Gini coefficient (in %) of EU-27 from 2002 to 2009

	2002	2003	2004	2005	2006	2007	2008	2009
BE	N/V	28.3	26.1	28	27.8	26.3	27.5	26.4
BG	26	24	26	25	31.2	33.3	33.9	33.4
CZ	N/V	N/V	N/V	26	25.3	25.3	24.7	25.1
DK	N/V	24.8	23.9	23.9	23.7	25.2	25.1	26.9
GN	N/V	N/V	N/N	26.1	26.8	30.4	30.2	31.4
ES	35	34	37.4	34.1	33.1	33.4	30.9	28.8
IE	N/V	N/V	31.5	31.9	31.9	31.3	29.9	33.1
GR	N/V	34.7	33	33.2	34.3	34.3	34.4	33
SP	31	31	31	32.2	31.9	31.9	31.9	29.9
FR	27	27	28.2	27.7	27.3	26.6	29.8	31.5
IT	N/V	N/V	33.2	32.8	32.1	32.1	31	29.5
CY	N/V	27	N/V	28.7	28.8	29.8	29	37.5
LV	N/V	N/V	N/V	36.2	38.9	35.4	37.5	35.5
LT	N/V	N/V	N/V	36.3	35	33.8	34	29.2
LU	N/V	27.6	26.5	26.5	27.8	27.4	27.7	24.7
HU	24	27	N/V	27.6	33.3	25.6	25.2	27.4
ML	N/V	N/V	N/V	27	27.1	26.3	28.1	27.2
NL	27	27	N/V	26.9	26.4	27.6	27.6	25.7
AT	N/V	27.4	28.8	26.2	25.3	26.2	25.3	31.4
PL	N/V	N/V	N/V	35.6	33.3	32.3	32	34.9
RO	30	30	31	31	33	37.8	36	35.4
PG	N/V	N/V	37.8	38.1	37.7	36.8	35.8	24.8
SK	N/V	N/V	N/V	26.2	28.1	24.5	23.7	24.8
FI	26	26	25.5	26	25.9	26.2	26.3	25.9
SW	23	N/V	23	23.4	24	23.4	24	24.8
UK	35	34	N/V	34.6	32.5	32.6	33.6	32.4
SV	22	22	N/V	23.8	23.7	23.2	23.4	22.7
EU-27		27.4	25.8	26.2	25.3	26.3	25.7	25.7

Source: EU-SILC (2014)

10. LIST OF ACRONYMS

1. **WB:** World Bank
2. **OECD:** Organisation for Economic Co-operation and Development
3. **DCSS:** Department of Census and Statistic of Sri-Lank
4. **FAO:** Food Agriculture Organization
5. **EU-SILC:** European Union Statistic of Income and Living Conditions
6. **CSBL:** Central Statistic Bureau of Latvia
7. **CMEA:** Council for Mutual Economic Assistance
8. **GDP:** Gross Domestic Product
9. **UNESCO:** United Nations, Educational Scientific and Cultural Organization
10. **WHO:** World Health Organization
11. **DCLG:** Department of Community and Local Government
12. **EC:** European Commission
13. **OMHLC:** Ontario-Ministry of Health and Long-term Care