Generation Y versus Generation Z: Correlation Analysis between the Living Standard and the Education Level

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ABSTRACT

The present research aims to provide evidence, from a statistical point of view, of the relationship between the education level of individuals and their associated living standard. The study is based on correlation analysis, which is able to highlight the association between the two elements of interest and, at the same time, to show the strength of their relationship. Additionally, the correlation analysis will be conducted both for Generation Y and Generation Z. Presenting the correlation results in comparison with the two types of Generation will facilitate finding similarities or differences between Generations. The analysis considers 14 European countries and uses two ways of referring to the living standard in accordance with the scientific literature. Among the key findings, there is one in particular to be mentioned: the level of education does matter more for Generation Z as compared to Generation Y in having a higher living standard. The limits of the analysis and future research directions are mentioned in the conclusions.

KEYWORDS: *correlation, education, Generation Y, Generation Z, living standard.*

JEL CLASSIFICATION: *I25, O15.*

1. INTRODUCTION

We live in a society that changes from one day to another, as technology advances due to discoveries made by researchers in various fields. These advances influence current and future generations living. In fact, among the multitude of factors influencing the living standard of generations, there is one in particular that will represent the main focus of this research paper, namely the education level. It is believed that people with higher education tend to have a higher living standard. However, things might be distinct between generations, as they are part of different historical periods of time, they have their own perceptions about working and living conditions, and in fact, their expectations are different. Thus, based on these considerations, in what follows, a series of indicators defining the education level, respectively, the standard of living for the two types of Generations, namely Generation Y versus Generation Z, will be discussed in detail.

The research question is as follows: Is there any connection between the education level of individuals and their living standard? This research question leads to the research objective: to determine, for each generation, the relationship and its strength between education level and the living standard.

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Studying the correlation of tertiary education and aspects of society represents a great opportunity for researchers to understand how one affects the other. Keeping this in mind, it should be underlined that GDP per capita is one of the most important indicators of a country's well-being, as well as education that prepares children and young adults to face life in all of its aspects. In this research, there is a reference to Generation Y, which was born between 1981 and 1996, and Generation Z, between 1997 and 2012. So, comparing these two generations enables highlighting development, in terms of education and growth. Nevertheless, the changes can be seen in life expectancy at birth, an indicator that is, in contrast with better conditions experienced by communities, offering an overview of the living standard.

The fact that this paperwork speaks about two generations that are close one to another and close to this present moment, it highlights the novelty, being a current topic that can be developed in many other research directions. With this, anyone can have an overview of the way in which the population is progressing and the areas that can be developed in time. Given the above considerations, this paper aims to highlight how tertiary education correlates with GDP per capita and life expectancy at birth in several European countries, along two distinct periods of time characteristic to either Generation Y or to Generation Z.

2. LITERATURE REVIEW

2.1 Generation Y versus Generation Z
Making a reference to the two types of generation in this way, it can be stated that they come from two totally different periods of time, so that each of them has totally different perceptions about the way of life in and? society. As an introductory reference, for a better understanding of the debated context, in the following, the reference period of each generation will be presented, namely, Generation Y is part of the period 1982 – 1994, while Generation Z is part of a more recent period, namely, 1995-2012 (Parker & Igielnik, 2020). It is considered that due to the standard of living that is in a continuous emerging sense, it would be recommended that young people start saving from these moments because it can be predicted that in the near future there will be a deficit significantly in terms of purchasing power or access to more facilities due to the current trend (Xie et al., 2023). From our point of view, immediately after the post-pandemic period, the standard of living of young people increased significantly despite the social networks that mostly had a positive influence on several categories of people. On the other hand, millennials have a much better consolidated financial education than Generation Z because during the existence of this trend, they did not have easy access to as many tools as possible, especially social media, so that in the end they had discernment on how to spend money for various purposes. It is said that the mentality of young people is based more on the behaviour of a heuristic life at the expense of saving time in accordance with the standard of living (Shefrin & Thaler, 1988).

Despite the current times, young people are not reduced to the economy based on the income obtained from their own sources or the social status, rather they are reduced to aspects that do not belong to them: demographic, behavioural, and educational factors. The previously mentioned aspects that refer to the standard of living of Generation Z are completely different from Generation Y (Goldring & Azab, 2020). Based on this consideration, it can be deduced that the members of Generation Z, having easy access to a multitude of benefits, must also take into account the aspect of saving in order to have a standard of living similar to the one they currently practice in retirement. Compared to Generation Y, which had a different level of education, but much healthier, because the opportunities were limited, during their youth

they managed to save money at the expense of which at the age of retirees they will feel the same level of life they had in their youth (Zemke et al., 2000; Dimock, 2019). The most worrisome aspect for Generation Z is represented by financial education, where many of them do not have consolidated bases to lead a decent life in the conditions where, at the moment, the basic principle is consolidated on live the life for once, not to live a normal life and saving for retirement (Laibson, 1997). Furthermore, the most alarming aspect according to studies is represented by the phrase saving, especially for young adults who currently have a multitude of benefits and entertainment that require expenses (Rolison et al., 2017; Loichinger et al., 2017).

Referring to the aspect of saving, the closer men are to retirement age, the more they save, because, approaching a logical ideology, it is assumed that upon reaching retirement age, they need a stable income from their own funds in addition to the pension offered by the state in order to ensure their reserve of medicine, food, respectively, a decent living because they no longer have the opportunity to obtain considerable income as in the first period of their youth (Hassan & Lawrence, 2007). According to the specialists in the field, the analogy has been reached that people from Generation Z tend to save much more money than Generation Y. Analysing this statement, it is found that having a much more solid, more balanced, more developed education, as Generation Z does (Bencsik et al., 2016), makes one much more pragmatic in terms of saving terminology, while for Generation Y, who unfortunately does not have so much saving knowledge due to the education system, the saving terminology is not common, so they do not rely on it in the first instance on this aspect of depositing money, especially for retirement age (Debevec et al., 2013). Referring to the aspect of the literacy rate, of knowledge for the two Generations, it can be said that for Generation Z "in the contemporary digital landscape, the acquisition of Logical Thinking and Digital Literacy skills stands as an imperative for students across all levels of education" (Imjai et al., 2024). Generation Z currently has a much more rigid knowledge base consolidated on a multitude of IT resources that are a click away, being advantaged from any point of view compared to Generation Y (millennials) who had limited access to information. But, according to the specialists who specify the fact that two economists have different opinions, but true for each of them, in what follows I will explain in more detail the literacy rate of Generation Z, respectively, of Generation Y.

Generation Z now has logical thinking skills, which "empower students to adeptly dissect, resolve, and deduce solutions for complex issues" (Turan et al., 2019), which is considered to be a great advantage, but, on the other hand, due to advanced technology and social media applications, a significant percentage of young people suffer on the literacy side because they no longer learn new skills, they no longer read books. Unfortunately, for them, due to advanced technology, the literacy rate is not in their favour from a positive point of view. For a certain category of students who are part of Generation Z, it can be deduced that they have abilities that differentiate them from Generation Y, mostly self-learning, the ability to be versatile in several fields, multi-tasking, respectively, the dynamic effect (Gouedard et al., 2020). Also, the previously mentioned aspects paradoxically contribute to the success rate of students, according to a study based on accounting students in which these effects are reflected in maturation due to the digital era (Liu et al., 2023). Thus, it can be deduced that Generation Z has a great advantage regarding this aspect, leading the predecessor generation. Generation Y can consider itself much more open to intelligence, because they did not have so many facilities that would destroy them in terms of literacy, especially the smart phone or social media applications that mostly consume a lot of time for young people. But for them in particular, a strong disadvantage is represented by the fact that not having access to a vast

amount of information, especially with technology that helps in terms of personal development, career plan, they unfortunately did not manage to develop so quickly in comparison with Generation Z, which had access to a multitude of information.

In conclusion, referring in particular to this aspect, the literacy rate of the two generations, "Generation Z students distinguish themselves by having come of age in the digital era, leading to distinct technology usage and learning approaches when contrasted with preceding generations" (Euajarusphan, 2021). In other words, in order to have a personal development in career and in other fields, the most important principle is represented by the fact that the most essential information must be extracted at the expense of which the literacy rate can substantially increase.

2.2 Measuring the standard of living

At the present moment, regarding the standard of living, there are a multitude of indicators that help us to deduce certain criteria more precisely regarding the subject under discussion, namely how we have the possibility to measure our standard of living in optimal conditions. As an opening to this topic, it can be stated that the standard of living is seen as a concept that can be associated with several aspects related to owning a car, clothing, nutrition, vacations, and education. All these aspects are appreciated by specialists in the field under a specific criterion, namely average real gross domestic product per capita (Federal Reserve Bank of Boston, 2003).

From the perspective of other specialists in the field (Sulzenko & Kalwarowsky, 2000), productivity is considered to be a factor that influences the standard of living because labour production is divided into two branches, respectively, labour production and total labour production. Based on this indicator, it is found that the more is produced, the more is consumed. Most concretely, this indicator simultaneously influences the rest of the indicators. The first branch, namely labour production, refers to the hourly work capacity for each product and service created so as to deduce the quantity produced. Referring to the second branch, in the discussion of total labour production, reference is made to the three factors of production: labour, land, and capital, which thus influence and measure the efficiency of their use by people in terms of the production of goods and services (Sulzenko & Kalwarowsky, 2000). Furthermore, the standard of living is influenced by the economic value of each country that addresses several specific economic activities that differ in the wider world on the basis of GDP (Capelli, 2023). For a bigger picture of this subject, in Western Europe, countries as Spain, Italy, Portugal, they have a higher standard of living based on tourism. Moreover, when discussing the area of the culinary field, France is the leader in this aspect thanks to restaurants with Michelin stars.

Another criterion for measuring the standard of living is represented by GNI (Gross National Income), which measures the value of the gain obtained by each citizen that is not measured in products or services as approached by GDP (Todaro & Smith, 2010). A concrete example is represented by the territories of Palestine "because of the large number of Palestinians working in Israel between 1994 and 2000, the GNI was on average 15% higher than the GDP" (Capelli & Vaggi, 2023). Another effective method approached by other specialists in the field is represented by the collection of various variables from several countries to find common elements based on which we can create a hierarchy with statistical data to analyse the level of living standard. The main variables of the standard of living can be found as: income, education, health, safety (Schwab, 2014).

3. METHODOLOGY

In order to develop the correlation analysis, there are some steps to be followed. They have been used and described also in a previous similar research paper (Cicea et al., 2023). They are referring to:

(1) Choosing macroeconomic indicators suitable for highlighting both the education level and the living standard of population.

(2) Analysing the selected indicators in order to ensure that they are reliable and to provide a first overview on their registered level for each country included in the analysis.

(3) Conducting the correlation analysis in order to highlight both the association and its strength, between the elements of interest.

(4) Discussing the findings.

Conducting a correlation analysis will imply calculating the Pearson correlation coefficient and interpreting the results in accordance with a well-known rule, the Colton's rules of correlation interpretation (Khamis, 2008; Mihăilă, 2014; Pirnau et al., 2019). The results generated with EViews 13, will be analysed in two directions. One will be able to show positive or negative correlations (by analysing the sign of the reported values). The other one will be able to capture the intensity of the correlation. So, according to Colton's rule, one should use intervals in order to express the relationship strength. Similar to the previous own research, we will use a coloured scheme for interpretation and better visualisation of results. The next table will contain all the necessary explanations.

Table 1. Visual interpretation of the correlation coefficients

between -0.25 and 0, or between 0 and 0.25.	A very weak relationship
between 0.25 and 0.50 or between -0.50 and -0.25	A weak relationship
between 0.50 and 0.75 or between -0.75 and -0.50	A moderate relationship
between 0.75 and 1 or between -1 and -0.75	A strong relationship

Source: authors' conception

Taking all the above explanations into account, the next section of the paper will present the main findings and discuss principal implications.

4. RESULTS AND DISCUSSION

4.1 Analysis of macroeconomic indicators on education level and standard of living

Based on the studied literature, which presents different ways of measuring the living standard and the education level of population, we decided to use the tertiary education level, as it is the highest level that can be achieved by anyone and it implies all other education levels already achieved. For measuring the standard of living, two possibilities arose: one of using the GDP per capita as a principal method of quantifying the living standard and one of using the life expectancy at birth. The selected indicators are further briefly presented for each generation. For GDP per capita, a general increasing trend can be observed with more than half of the studied countries above the EU-27 average.
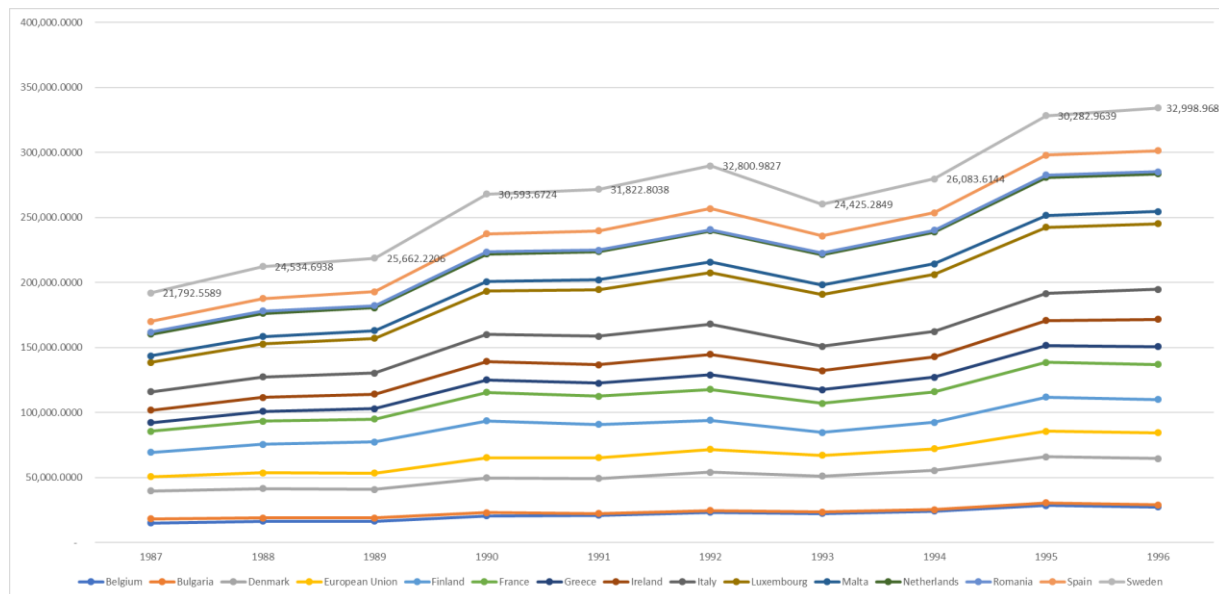
Figure 1. GDP per capita (current US$) for Generation Y
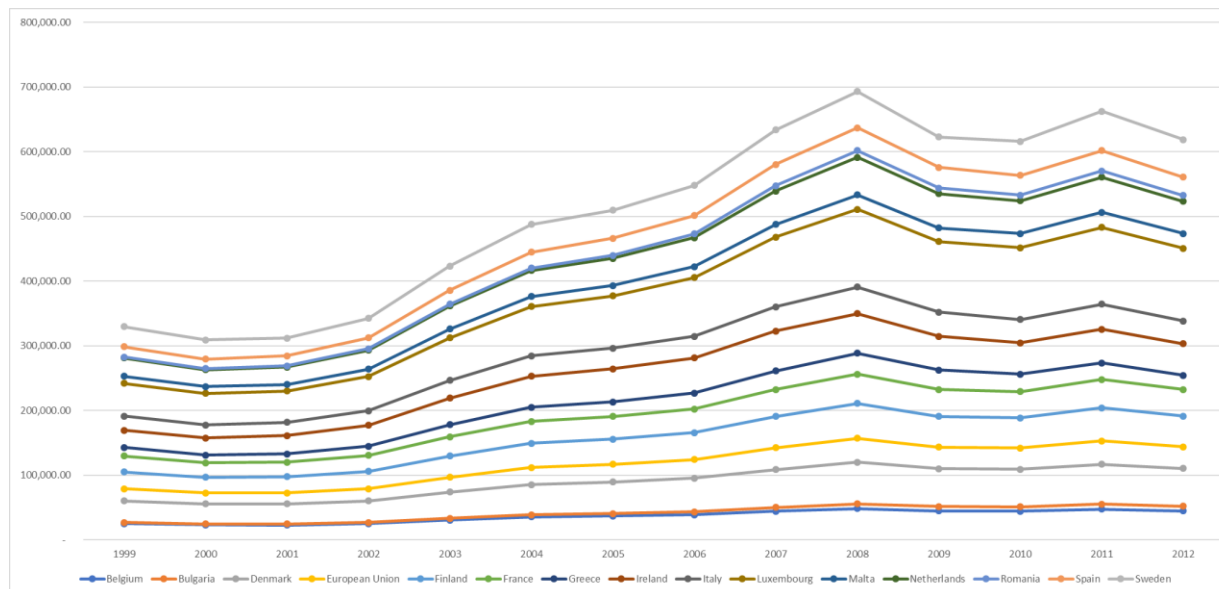*Source:* authors' representation after World Bank (2024a)

Figure 2. GDP per capita (current US$) for Generation Z
Source: authors' representation after World Bank (2024a)

It can be observed from Figure 1 and Figure 2, that regardless of the belonging to one generation or another, the European states have experienced an increase in the level of GDP per capita. The highest levels of GDP per capita are registered by both Generation Y and Generation Z in Sweden, Spain, the Netherlands, Romania, and Malta, while the lowest levels were reported for Belgium and Bulgaria.

Regarding the second indicator, which is intended to give an overview of the living standard, it is further represented in Figure 3 and Figure 4.
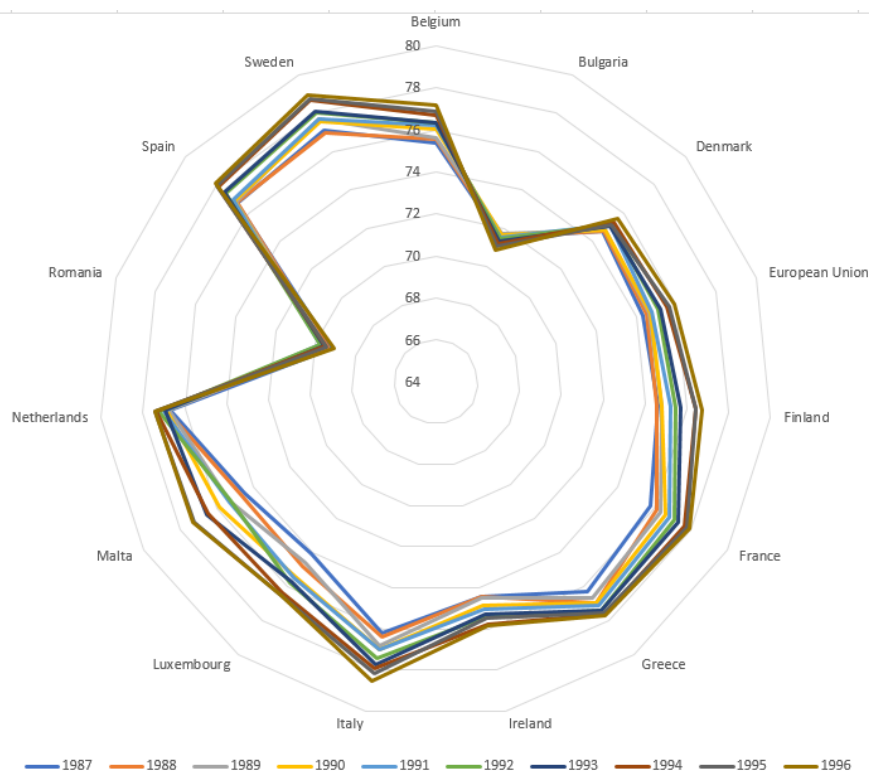
Figure 3. Life expectancy at birth, total (years) – Generation Y
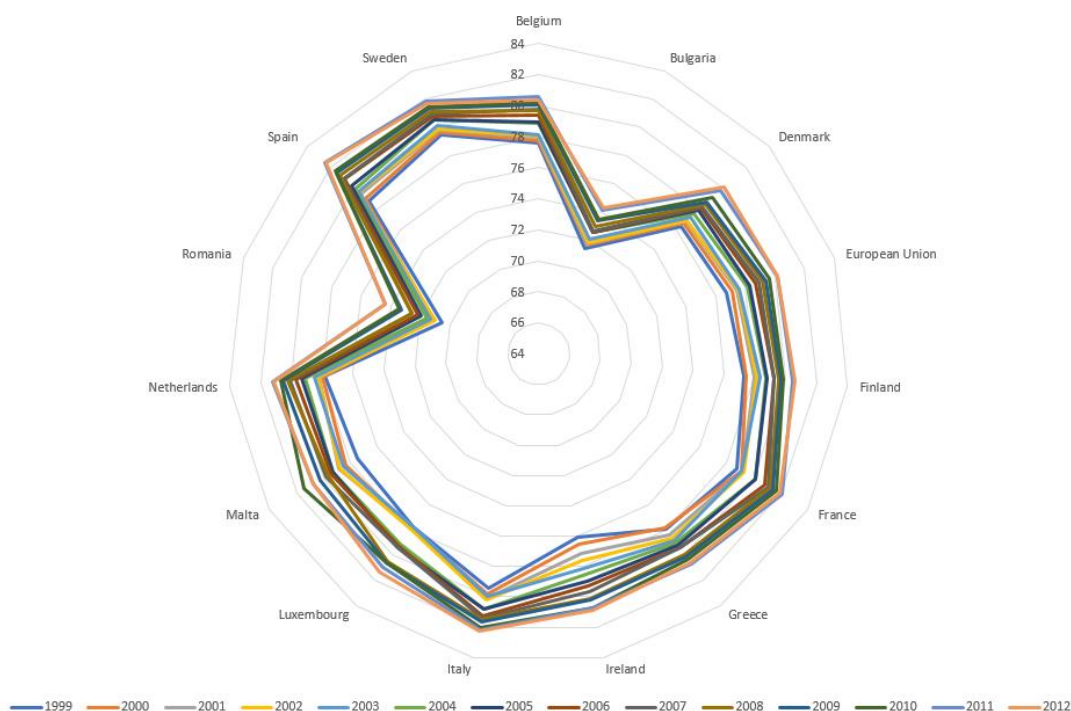*Source:* authors' representation after World Bank (2024b)

Figure 4. Life expectancy at birth, total (years) – Generation Z
Source: authors' representation after World Bank (2024b)

The analysis of the last two figures shows the lowest levels of life expectancy at birth in Romania and Bulgaria in both situations (Generation Y and Generation Z), while the highest

level is encountered in Italy and Spain (around 82 years). However, there are improvements felt by each country regardless of the generation, when referring to life expectancy at birth.
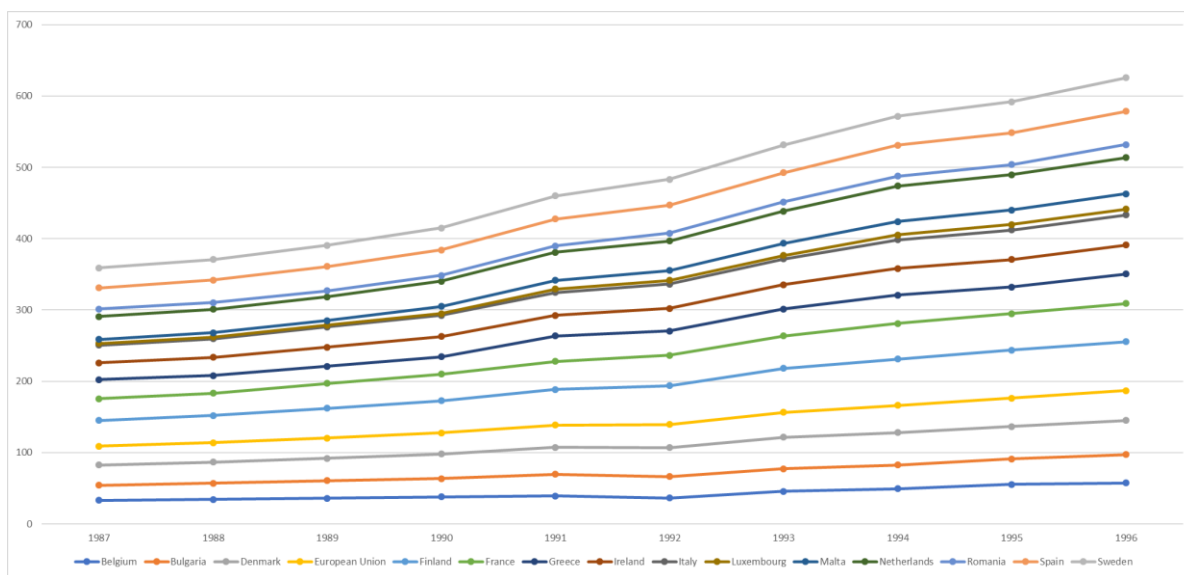

Figure 5. School enrolment, tertiary (% gross) – Generation Y
Source: authors' representation after World Bank (2024c)
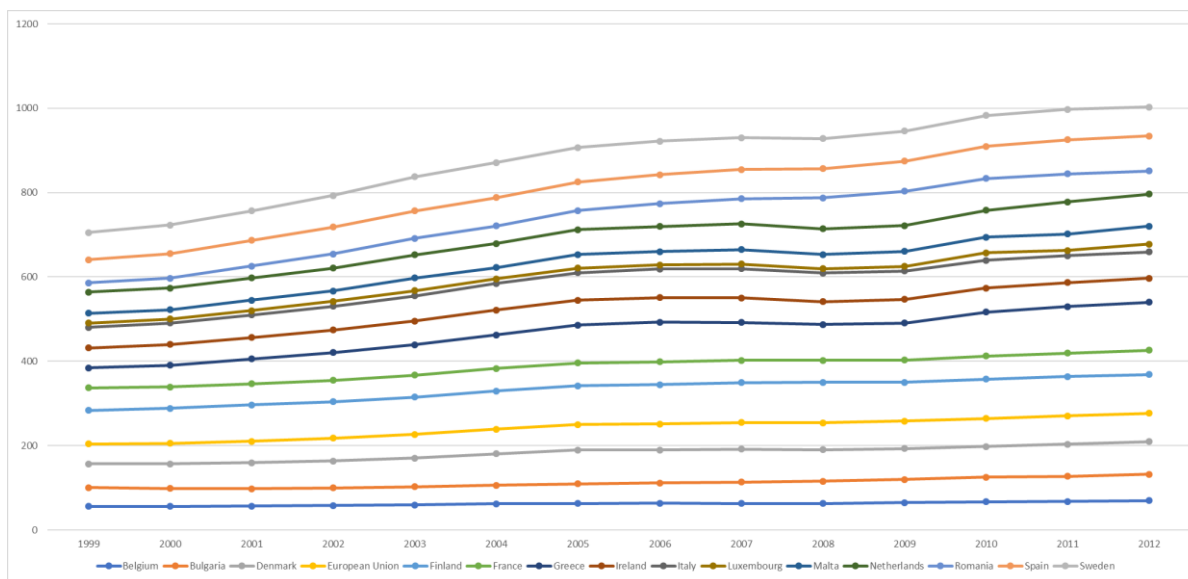

Figure 6. School enrolment, tertiary (% gross) – Generation Z
Source: representation after World Bank (2024c)

To highlight the education level of population, the following indicator was used: School enrolment, tertiary (% gross) was used. World Bank (2014c) defines this concept as "the ratio of total enrolment, regardless of age, to the population of the age group that officially corresponds to the level of education shown. Tertiary education, whether or not to an advanced research qualification, normally requires, as a minimum condition of admission, the successful completion of education at the secondary level". As it can be observed for both generations, there is an increase in the level of education on the considered period. The best performer is Sweden, followed by Spain and Romania for both Generation Y and Generation Z. By using these three indicators, the next section of the paper, computes and analyses the correlation coefficients.

4.2 The correlation analysis between education level and living standard

The values of the correlation coefficients between education level and living standard are presented in Table 2, on the left side for Generation Y and on the right side for Generation Z. The relationship between them is mostly positive and strong, for most of the European countries considered in the analysis. For Generation Y, there are two states, Finland and Romania, reporting inversely proportional and very weak relationship between education level and the living standard. Each generation has its own country reporting similar weak positive relationship between education and living standard. What is more, they are well-developed economies, Luxembourg and Sweden. As for the European Union level, all studied correlations are p/positive and strong.

In accordance with correlation analysis results presented in Table 2, we can conclude that there is a connection between the level of education and the living standard, higher for some countries in case of Generation Z compared to the situation of Generation Y. Even if expected to appear like this in almost all situations, there are also exceptions such as: (1) Ireland which seems to have a stronger connection between indicators reported for Gen Y as compared to Gen Z. (2) An awkward situation for Sweden, which fall from 0.96 correlation coefficient for Gen Y to 0.05 for Gen Z, if taking into account life expectancy at birth as a measure for standard of living. (3) A worsening reported for Luxembourg form high positive correlations for Gen Y to moderate and weak relationship for Gen Z. (4) Oposite relationships appear in the case of Romania, where we witness a switch from negative weak correlation (Gen Y) to positive strong correlation (Gen Z). The analysis based on these results should be deepened to reveal factors of influence and to find out why changes like these occur.

Table 2. Correlation results

Country	GENERATION Y		GENERATION Z	
	Tertiary education - GDP per capita	Tertiary education - Life expectancy at birth	Tertiary education - GDP per capita	Tertiary education - Life expectancy at birth
European Union	0.90	0.99	0.95	0.97
Belgium	0.89	0.92	0.89	0.96
Bulgaria	-0.70	-0.88	0.94	0.95
Denmark	0.91	0.93	0.83	0.74
Finland	0.10	0.98	0.91	0.83
France	0.94	0.99	0.67	0.75
Greece	0.84	0.85	0.74	0.95
Ireland	0.95	0.94	0.81	0.75
Italy	0.68	0.99	0.92	0.80
Luxembourg	0.95	0.92	0.44	0.56
Malta	0.92	0.93	0.94	0.88
Netherlands	0.94	0.91	0.77	0.91
Romania	-0.12	-0.58	0.93	0.81
Spain	0.83	0.97	0.76	0.96
Sweden	0.48	0.96	0.09	0.05

Source: authors' computation with EViews

5. CONCLUSIONS

This research paper aligns to the body of research regarding the relationship between education and the living standard. It is commonly believed that there is a positive correlation between the two of them. Many studies have revealed this conclusion; however, there are also exceptions, as presented above.

The limits of this paper consist of: (1) choosing the indicators for computing the correlation coefficients. According to the scientific literature, there are other relevant indicators capable of describing the education level of population and its living standard. (2) Data availability imposed finding a method of estimating the missing values, which may have affected the overall results. The paper has its theoretical contributions for the literature and also its meaning in a practical context. Suggestions to improve future research on this topic include the need to review other factors that affect the living standard or to analyse the relationship with other methods.

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