

The Relevance of the Correlation of Some Economic Variables For the Achievement of Sustainable Development Objectives At the Level of the European Union

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Abstract

The present work aims to carry out an analysis regarding the influence of some variables included as defining factors in the implementation of the SDG strategy for the year 2030, which have a direct effect on the GDP at the level of the EU countries. Thus, the size of GDP reflects both the material well-being of a country and its social well-being, including topics such as education, health, human safety, pollution, equal opportunities, etc. All these desired are included in the 2030 Agenda for Sustainable Development, the EU countries being in the process of implementing some strategies aimed at achieving these objectives. As such, GDP will be analyzed in correlation with a number of economic variables, likely to have an effect on economic growth and sustainable development.

Key words: SDG, education, GDP, growth, sustainable development

J.E.L. classification: M14

1. Introduction

Although a controversial indicator and suppressed by many researchers, the GDP still remains the basic indicator in the evaluation of the well-being of a society, being assimilated with development, success, economic growth, power. But most of the time, only the economic activities that could have an impact on its development are analyzed, ignoring other types of activities that, although they do not generate income directly, have a strong impact on the social health of a country, health that later reflects in work productivity, work effectiveness, work fairness, without which GDP could not evolve.

2. Literature review

The specialized literature proposes a series of models for encouraging economic growth, but the current literature focuses on sustainable economic development. Thus, economic growth must be analyzed from the perspective of sustainable development and sustainable actions. Ever since 1967, authors such as Denison have stated that education has a particularly important role in economic growth and the development of a society. At the same time, Berthelemy and Varoudakis (1996), underline the fact that investment in education can potentiate economic growth by developing activities that can keep pace with technological progress.

In September 2015, at the UN Summit, the 2030 Agenda for Sustainable Development and its 17 Sustainable Development Goals were adopted. The agenda offers a broad program of measures that promote the basic pillars of sustainable development - economic, social and environmental.

The 17 Sustainable Development Goals (SDGs) represent an ambitious plan of action by all countries for prosperity, for people and the planet, now and in the future. (United Nations <https://sdgs.un.org/goals>)

In December 2019, the European Commission adopted The European Green Deal, that aims to transform the Union into a modern, resource-efficient and competitive economy where climate and environmental challenges are addressed and turned into opportunities.

Currently, in any debate regarding economic growth, the notion of sustainability must be included, this being a topic of global interest, aimed at solving global problems, such as climate change or biodiversity. (Bastianoni et al., 2019). Since the main element that generates problems regarding sustainability is the human resource and its actions, a new approach is necessary to change the current model regarding production and rethink the market economy in an intelligent way (Olcese et al, 2014). Education enhances competences, increases skills, increases productivity and generates new knowledge (Aslam, 2011).

Lucas (1990) believes that developing countries must give greater importance to education, through important investments to train better employees who will help economic growth.

In his study, Why and how education affects economic growth, Review of International Economics, Zeira states that an increased cost for education inhibits development and growth as a whole slows down. As such, governments will prioritize education, as a strategic sector with a positive impact on economic growth, based on the social responsibility imposed by the new sustainability objectives.

3. Research methodology

The research focuses on the analysis of the objectives that place the human factor in the center of attention, which through access to health, quality education, can support economic growth in an unpolluted and sustainable environment.

In the research, we highlighted the correlation between SDG 3, SDG 4, SDG 8 and SDG 13, as defining elements of economic growth in the context of the sustainable development of society.

Thus, we analyzed the evolution of GDP, as an indicator of economic growth, with the other economic variables that reflect the mentioned SDGs.

For this we used a statistical processing with the help of SPSS, to show the degree of correlation between the four SDGs with the help of some economic variables, such as:

SDG 3 - Health and well-being - Ensuring a healthy life and promoting well-being for all at all ages. Physical and mental health is the basis of the development of any society, as such, economic activity cannot be perceived, in the absence of adequate health that potentiates economic efficiency and effectiveness.

SDG 4 - Quality education - Guaranteeing quality education and promoting lifelong learning opportunities for all. Education, through its components, the dropout rate, respectively the integration rate in an education system influences the sustainable development of some societies. Also within the framework of quality education, the Digitization Process is included through the variable Share of individuals having at least basic digital skills. This process of digitalization is considered to be a field of real importance in the development of any economy through the transition from homo sapiens to homo technium - thus no activity can be perceived outside of digitalization, the phenomenon covering all aspects of social and economic life.

SDG 8 - Decent work and economic growth - Promoting sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all. Access to health, human safety and education directly generates an increase in employment, which in turn generates a high economic level.

SDG 13 - Climate action - Taking urgent measures to combat climate change and its impact. The management of natural resources, the management of climate change, the reduction of the level of pollution represent factors that enhance the health of the population and economic growth.

Practically these SDGs place people in the center of attention. Ensuring a healthy life, a quality education, with lifelong learning opportunities contributes to people's well-being, economic growth in a sustainable society. The correlation between these objectives is difficult to determine or estimate at the EU level, as each member state has issued measures and directives to achieve these targets by 2030.

Starting from the importance of these topics in the sustainable development of a society - they being components of the SDG for 2030, as they also appear in Eurostat, we will use the analyze - correlate function to validate or invalidate the following premises:

Hypothesis 1 - there is an inverse and strong relationship between the early leavers from education variable and GDP

HYPOTHESIS 2 – there is a strong and inverse relationship between the variable Average CO2 emissions per km from new passenger cars and GDP

Hypothesis 3 – there is a direct and strong relationship between the variable adult participation in learning, share of individuals having at least basic digital skills and GDP

Hypothesis 4 - there is a direct relationship between the performance of the health system (Share of people with good or very good perceived health) and GDP.

In this sense, the EU countries were analyzed starting from the data available in Eurostat in 2021 for the previously mentioned indicators, each indicator being in fact an integral part of the SDG.

Following the validation/invalidation of the hypotheses, we built a model for approaching the GDP indicator by highlighting the branches that proved to have an impact on GDP development.

4. Findings

Table no. 1 Correlation analysis

Variables		GDP/capita
Early leavers from education and training by sex	Pearson Correlation	-0,038
	Sig. (2-tailed)	0,843
	N	27
Adult participation in learning by sex	Pearson Correlation	,578**
	Sig. (2-tailed)	0,001
	N	27
Share of individuals having at least basic digital skills	Pearson Correlation	,666**
	Sig. (2-tailed)	0,000
	N	27
Share of people with good or very good perceived health	Pearson Correlation	,544**
	Sig. (2-tailed)	0,003
	N	27
Average CO2 emissions per km from new passenger cars (source: EEA, DG CLIMA)	Pearson Correlation	-,620**
	Sig. (2-tailed)	0,000
	N	27
GDP	Pearson Correlation	1
	Sig. (2-tailed)	
	N	30
**. Correlation is significant at the 0.01 level (2-tailed).		

Source: own design based on gathered data using SPSS v22

HYPOTHESIS 1 - there is an inverse and strong relationship between the early leavers from education variable and GDP

Hypothesis with no. 1 is partially validated, in the sense that an inverse relationship is identified between the two variables, education and training system having an inverse impact on GDP. Thus, the higher the number of people who leave school early, the more the GDP is influenced in the opposite direction (it is lower). However, the influence is not a strong one. This can be explained by the fact that although the employees are not specialized, the workforce is no longer qualified, advanced technology can supplement these deficiencies. Most of the time, the activities in different companies are repetitive, standardized, only a part of them requiring qualified labor force. Technology tends to replace the human resource, thus canceling the negative effects generated by the lack of qualified labor.

HYPOTHESIS 2 – there is a strong and indirect relationship between Average CO2 emissions per km from new passenger cars and GDP.

Hypothesis number 2 is fully validated. A strong but inverse relationship is evident between the two variables. Thus, the higher the number of CO 2 emissions, the lower the GDP will be and vice versa. As such, pollution affects health, productivity and implicitly the economy.

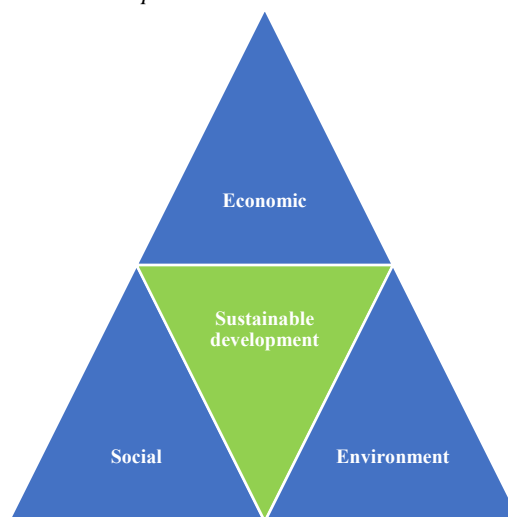
HYPOTHESIS 3 – there is a direct and strong relationship between the variable adult participation in learning, share of individuals having at least basic digital skills and GDP.

Hypothesis 3 is fully validated. Education is still the catalyst of economic growth and the well-being of a society. Economic growth is shaped and led by trained individuals, who can coordinate activities, even if routine, simple activities are managed by unskilled people, technology cannot alone coordinate a production process and cannot function without personnel from the top of the organizational structure which will obviously be educated. Also in this context of education, the aspect of digitization is highlighted, which has gained momentum in recent years, especially with the spread of COVID 19 and the imposition of a predominantly virtual lifestyle.

HYPOTHESIS 4 - there is a direct relationship between the performance of the health system and GDP.

The variable share of people with health perceived as good or very good correlates directly and strongly with the GDP. In this context, we can say that a healthy society, with healthy people, can be considered a strong, able-bodied, productive society that will generate consistent income, even by using health services. A healthy society is a society that constantly calls on health services, both for maintenance and for treatments, thus contributing to the increase of the GDP. Thus, good or very good health influences the GDP through two directions, respectively - the investments of individuals in the health system for maintenance and remediation as well as through a large number of healthy, productive people who can carry out different activities in an effective manner.

Figure no. 1. Sustainable development matrix



Source: own design

Following the analysis, we can see that sustainable economic development is based on 3 pillars, namely education, health and the digitization process. The 3 domains, through its variables stated in the research hypotheses, show strong correlations with the GDP. As such, the governments of emerging countries and not only, will treat the welfare indicators referring to the variables that describe the SDG, a responsible economic growth representing a desire of the current societies.

However, the analysis includes a limited number of variables (only 4 SDGs were analyzed), as such a future research will include a more complete analysis, which will include other indicators likely to influence economic growth. Taking these limitations into account, the research results could be the starting point for new research topics. These research directions could have positive effects on sustainable development and the achievement of the SDGs as envisaged in the 2030 Agenda.

5. Conclusions

In conclusion, it can be seen that, of the 4 hypotheses under consideration, 3 were fully validated and one of the hypotheses was partially validated, thus creating an easy model for approaching the theme of economic growth by referring to 3 basic pillars. Two of the stated hypotheses followed the impact of education on economic growth, one hypothesis concerned the importance of a clean environment, and the last hypothesis reiterated the importance of health and therefore the importance of a strong health system in GDP estimation.

The results of this analysis could generate new research directions, expanding the set of correlations for the other SDGs that define economic growth at the level of the EU member states. Thus, a complex approach to all the SDGs can influence the economic, social and environmental objectives that underlie the sustainable development of society.

As such, in order to achieve sustainable economic growth, the EU must increase investments in health, education and professional skills, to transform it into a modern economy, in which environmental challenges are transformed into opportunities.

In conclusion, it is necessary to ensure the coherence of policies and actions at the level of all EU member states, so that all citizens can benefit from quality health and education services, which generate healthy and professionally trained people.

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