EMPIRICAL EVIDENCE OF THE RELATIONSHIP BETWEEN THE SDGS AND ECONOMIC GROWTH IN ALBANIA: THE ROLE OF EDUCATION

DESANTILA MUJA[1,2]

[1] Ministry of Finance and Economy, Tirana, Albania
desantila.muja@yahoo.com
[2] University of Tirana, Faculty of Economic, Tirana, Albania
desantila.muja@yahoo.com

Abstract Education is considered as a catalyst for change and sustainable development. While, the Sustainable Development Goals are a universal call to action to face global challenges, especially in developing economies. In this regard, the research intends to empirically investigate the relationship between selected UN SDGs and GDP per capita growth rate as a proxy for economic well-being in Albania, focusing more on the role of education, which places emphasis on the knowledge economy. This study employed the Ordinary Least Square regression model as a statistical technique where GDP per capita growth rate is taken as the dependent variable. The data for the period 2007-2020 were sourced from the World Bank, International Labour Organization, Food and Agriculture Organization and INSTAT. The results show that total government expenditure on education (% of GDP), decent employment and hunger are positively related to the GDP per capita growth. However, decent employment appears to be insignificantly related, while gender equity/women's empowerment appears to be negatively insignificantly related to the GDP per capita growth rate. The research indicates that education can promote economic and socioeconomic goals, consequently, the Albanian government should invest more in education and training.

1   Introduction

The fulfilment of the Sustainable Development Goals (SDG) is on top of the agenda of every member country of the United Nations, including Albania. The 2030 Agenda for Sustainable Development was adopted by all United Nations Member States in 2015. The 17 SDGs recognize that ending poverty and other deprivations must go hand-in-hand with strategies that improve health and education, reduce inequality, and spur economic growth. The agenda's 17 SDGs and their 169 targets, aim at eradicating poverty in all forms and "seek to realize the human rights of all and achieve gender equality".

In order to achieve these goals, the Albanian Government has followed the approach of integrating the SDGs targets in the national systems and instruments of the processes, such as the incorporation/integration of the 2030 Agenda global objectives in the National Integrated Planning System and the refraction and harmonization of the SDGs with the strategic framework of the country (National Strategy for Development and European Integration and sectoral and intersectoral strategies. As well, a manual has been drafted in 2021 to provide support to municipalities that are willing to prepare Voluntary Local Assessments of the SDGs.

In this context, special importance is given to the SDG4 'Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all' which emphasizes the importance of equality, inclusiveness and gender equality, effective learning and the practical and life value of what is learned. The objective of this study is to empirically investigate the relationship between the selected UN SDGs and GDP growth as a proxy for the economic well-being of Albania from 2007 to 2020. The research questions of this paper are:

RQ1: What is the impact of progress in selected SDGs on the economic growth in Albania?

RQ2: What is the role of education in influencing the GDP per capita growth rate in Albania?

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This study employed the Ordinary Least Square (OLS) regression model as a statistical technique. Data were sourced from the World Bank, Ministry of Finance and Economy of Albania, Food and Agriculture Organization, International Labor Organization.

The rest of the paper is structured as follows. The Section 2 consists of the literature review, the Section 3 refers to the data and methodology presentation, while the Section 4 gives the empirical results. Lastly, in the Section 5 the main conclusions are summarized.

2   Literature Review

Education and training (SDG 4: educational quality and lifelong learning) also positively influences most of the UN SDGs by reducing trade-offs and maximizing their synergies (e.g., SDG 1: no poverty (Radchenko, 2019; Diwakar & Shepherd, 2022), SDG 2: no hunger (Shepherd, 2022), SDG 5: gender equality (Gebre, 2020), SDG 8: decent jobs and economic growth (Alwi et al., 2019). As a result, SDG 4 is regarded as a foundational SDG because it influences the achievement of most of the other SDGs (Lawrence et al., 2020).

Based on empirical studies, there are strong evidences of a positive relationship between education and GDP growth. Marquez-Ramos and Mourelle (2019) concluded that both secondary and tertiary education present a positive and significant relation with economic growth in the case of Spain, while government expenditure on education is not relevant for explaining economic growth in the linear specification. According to Adeniyi et al. (2021), the short-run results revealed that education quality played a significant role in enhancing inclusive growth in some of the countries of West Africa. Analyses of human capital across 14 OECD economies – based on literacy scores – also suggest significant positive effects on growth (OECD (2006), as well as Mercana and Sezer (2013) found a positive relationship between education expenses and economic growth in the Turkish economy. There are also evidences that there is no correlation between public expenditure for education and economic growth (Karaçor et. al., 2017; Villela & Paredes, 2022). While Frank (2017) revealed that in non-oil countries education expenditure increases economic growth, in developing countries education expenditure has a negative impact and in OECD countries the impact is non-

significant. Many studies have noted that gender equality in education contributes to economic growth (Morrison et al., 2007; Altuzarra et al., 2021), which is a common feature in developing countries. In addition, they found that equality in education positively contributes to economic growth, which means that higher GPI for the gross enrolment rate is an efficient economic option for all developing countries. According to Kabeer and Natali (2013), the evidence that gender equality, particularly in education and employment, contributes to economic growth is far more consistent and robust than the relationship that economic growth contributes to gender equality in terms of health, wellbeing and rights.

Empirical results reported in the paper of Arcand (2001) suggest that eliminating, or at least significantly reducing, poverty, will have an important quantitative impact on the growth rate of GDP per capita. Furthermore, according to Nafti (2021), the results of the estimates clearly show a negative relationship between economic growth rate and under nutrition prevalence; however, the economic growth of developing countries seems to be a key factor in reducing poverty and the proportion of the undernourished population.

Empirical studies highlight that economic growth tends to be positively associated with job creation. Coscieme et al. (2020) investigated the relationship between the GDP and the SDGs in European Union countries. They pointed out that in the European Union (EU), GDP growth is uncorrelated with indicators of environmental sustainability and well-being (such as employment rates) and was inversely correlated with the indicators of economic performance (such as GDP). Liu and Bi (2019) found that the better educated the labor force, the greater total capital productivity. This is because educated employees are more inclined to innovate, hence raising everybody's productivity.

3   Methodology

In this section, the data sources and the method adopted in the analysis will be explained. Data from 2007 to 2020 were collected from multiple sources to maximize the data and multiple regression was employed to explore the association between GDP growth per capita rate and selected SDGs variables.

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3.1   Data and measurement

This study aims to examine the relationship between selected SDGs indicators and Albania economic growth represented by the GDP per capita growth rate. The dependent variable is the GDP per capita growth rate. The independent variables consist of quantifiable and accessible time series data related to 4 selected SDGs targets for Albania. The choice of these targets and their respective indicators is based on their significance to Albanian's NSDEI 2030. Data were sourced from the World Bank, Ministry of Finance and Economy of Albania, Food and Agriculture Organization, International Labor Organization. Table 1 shows the independent variables, their description, source, measurement, and relevant SDG.

Table 1: Variables Description and Measurement

Explanatory Variable	Variable Description	Measurement	Relevant SDG
GDP per capita growth rate **(GDPC)**	Annual GDP per capita growth rate	Annual percentage growth rate of GDP per capita based on constant local currency	8
Education **(EDU)**	Total government expenditure on education as % of GDP	Government expenditure on education, total (% of GDP)	4
Gender Equity/Female Empowerment **(GEFE)**	Gender parity index (GPI)	Gender parity index for gross enrolment ratio in tertiary education is the ratio of women to men enrolled at tertiary level in public and private schools.	5
Hunger **(HGR)**	The prevalence of undernourishment (Hunger rate as a percentage of the population)	The proportion of the population whose habitual food consumption is insufficient to provide the dietary energy levels that are required to maintain a normal active and healthy life.	2
Decent employment **(DEMP)**	Decent employment for all males and females	Employment-to-population ratio by sex and age (%)	8

Source: Author research

3.2   Empirical model and method

The following empirical model in Equation (1) will be estimated to determine which sustainable development goals variables significantly affect the GDP per capita growth rate in Albania.

$$GDPC_t = \beta_0 + \beta_1\ EDU_t + \beta_2\ GEFE_t + \beta_3\ HGR_t + \beta_4\ DEMP_t + \varepsilon_t \qquad (1)$$

The variables are defined in the table no. 1, while ε_t is the error term.

This study employed the OLS regression model as a statistical technique to analyze the relationship between the selected SDGs and the GDP per capita growth rate in Albania. The model has several limitations such as: (a) small number of selected SDGs targets due to the lack of data for the period 2007-2020; (b) small number of observed time series data (14 observations) due to the lack of data before 2007 for some of the variables included in the analysis; (c) Lack of data for Western Balkan countries (WBCs) in order to see where does Albania stand in achieving the SDGs as compared to WBCs.

4   Results

This section presents the results of the multiple regression analysis of the identified UN SDG variables on Albania's GDP per capita growth as shown in the Table 2.

Table 2: Multiple Regression Results of SDG Variables on GDP per capita growth rate.

Variables	Coefficient	Standard Error	T−Statistic
Constant	-0.220	0.256	-0.857
EDU	2.549*	1.552	1.643
GEFE	-0.020	0.181	-0.108
HGR	2.078***	0.655	3.172
DEMP	0.165	0.174	0.949
R^2	0.717		
F	5.695		

Notes: The symbols *, **, and *** indicate statistical significance at the 15%, 10%, and 5% levels, respectively.

Table 2 shows that the model has satisfactory explanatory power with $R^2 = 0.717$. The education variable has the highest coefficient and reveals a positive and statistically significant relationship with the GDP per capita growth rate in Albania, which is of interest in this study. Gender equity/women's empowerment appear to be negatively insignificantly related which is not in line with literature review. This because tertiary education does not have an immediate impact as compared with literacy/primary and secondary education in lower income countries.

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The relationship between hunger and the GDPC is negative which is not in line with literature review. This may be attributable to problems such as food waste, which can be addressed by educating and training the population. Decent employment is positively, but insignificantly related with GDPC.

5   Discussion and Conclusion

In this paper it was investigated the impact of selected SDGs in GDP per capita growth rate in Albania, where two research questions were raised. The focus was on the impact of education as one of the important components of opportunities and empowerment. In accordance with the examined literature, education and training plays a vital role in developing a country's human capital and boosting economic growth. It resulted a positive and statistically significant between education and GDP per capita growth rate, so 1 percentage point increase on EDU leads to 2.549 percentage point increase on the GDP per capita growth rate.

According to Singh and Alhulail (2022), in the developing economies, education is perceived as the effective way to attain gender equity through which people can enhance their economic and social welfare. In this context, Government of Albania needs to invest more on education and training in order to encourage gender equity, as it encourages women's participation in the workforce and contributes to economic activities. Furthermore, the Government of Albania should further develop multi-sectoral early childhood education policies; improve the school infrastructure; ensure full inclusion in the preparatory class and in compulsory education, where as a result access to preschool and higher secondary education could be increased.

Considering the high importance of the education, as well as the importance of achieving UN SDGs, this analysis could be further extended on investigating the impact of education on SDGs attainment not only in Albania, but as well for WBCs.

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