PUBLIC EXPENDITURE ON EDUCATION IN THE EU MEMBER STATES: A CLUSTER ANALYSIS

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Abstract: The aim of this article is to present the commitment of EU Member States to their education policies. The key points in the article are the importance of investing in human capital and the effectiveness of the state as such an "investor". Through clusterization of the available data, the author has grouped the EU countries according to their governments' policy on financing education.

Key words: public expenditures, education, EU, financing.
JEL: H41, I22, I28.

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Introduction

In the modern world, good education is a must not only for personal satisfaction and self-confidence but also for meeting the demand of the market as well as for maintaining the competitiveness a nation on a regional or global scale. This is why national governments should be committed to ensuring the necessary conditions and means to finance the rendering of educational services.

The **subject** of this study are central government policies in the field of education. The scope of the analysis is limited to the territories of the EU Member States and to the period from 2001 to 2016. The **object** of the study is the commitments of the EU Member States to subsidize the sector of education and to prioritize education as an element of the overall policy of their central government. The **main purpose** of the article is to group the 28 EU Member States into clusters in terms of certain common features, to compare the clusters and the countries within each cluster, and to analyse their similarities and differences within certain time frames. The **research**

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hypothesis is that the policies adopted by the governments of the EU countries and the consequences of the global financial crisis have created conditions for reducing their differences of their policies regarding the financing of their education systems.

1. Education – a public and/or a mixed good

In economic theory, the question of how an economic system should be structured is debatable. The bone of contention among researchers is whether the state must intervene in the economy, or the market should be left alone to regulate and adjust itself. The answer to this question is that neither of these extreme solutions is working, i.e. that modern economies should be regulated only to a certain degree because on the one hand they cannot be fully efficient without certain intervention from the state, but on the other hand, the state cannot replace the inherent self-regulating functions of the market. However, we cannot ignore the fact that in certain cases the free-market logic results ion a loss of public welfare and that such cases require intervention of the state. For example, when the volume public expenditures were not estimated correctly, the market system could either allocate more resources to goods with lesser utility and even for goods which are harmful to the society or allocate less resources (or not allocate any resources) to goods with higher than the originally estimated public utility, the supply of which requires significantly more resources. (Nenkova, 2004)

Most often than not, the second category includes some of the so-called "public goods". A public good is a good that is that is both non-excludable and non-rivalrous in that individuals cannot be excluded from use or could be enjoyed without paying for it, and where use by one individual does not reduce availability to others. (Brusarsky, 2007) In real-world economies “pure” public goods (i.e. goods that exhibit both of the above characteristics) can hardly be found. The socio-economic relations between the state and the market have led to the formation of mixed goods, i.e. goods that are either non-rivalrous but excludable or non-excludable but rivalrous. Such a mixed good is public education.

The classification of education as a mixed-type good should not be absolutized. Under certain circumstances education can have the characteristics of a “pure” public good. The qualification of education as a public good or as a mixed good depends the generally accepted levels of education and the needs of the society. (Polcyn, 2015; Locatelli, 2018) Pre-school, primary, and secondary education can be assumed as mostly public goods (since these levels are compulsory by law for every citizen and is financed

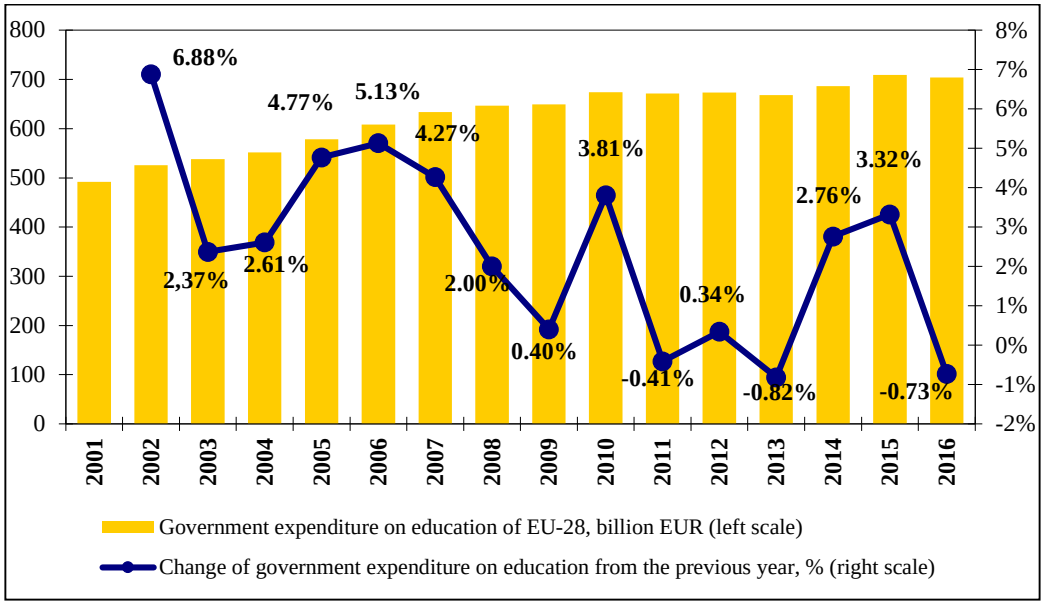
from the state budget). According to Kazakov (2001, p. 77) "the lower the level of education, the more it is financed by the state". The policy of every government must ensure equal access to quality education for all students irrespective of their gender, background, socio-economic or cultural status, i.e. it must not prevent them to develop their knowledge and skills to the extent of their full potential. This is the reason why education is defined as one of the main national priorities in various strategic documents. In higher education and the provision of additional types of educational services, there is rather similarity to the characteristics of mixed goods because of the possibility that a certain part of the population of a community is excluded from the benefits of these goods through the need for additional payment (Moşteanu & Cretan, 2011). Higher and continuous education levels have the characteristics of a mixed good because they can be exclusive for some mebers of the society who cannot afford to pay the required tuition fees. (Moşteanu & Cretan, 2011)

2. The public sector and its role in financing education expenditures

The global technological development, especially in recent years, is one of the reasons why investing in human capital and education is becoming increasingly important (Kazakov, 2001). Larger investments in education have a significant impact on all elements of social development on both microeconomic (individual and corporate) and macroeconomic (Zahariev, 2001; Mukherjee, 2007) level, including demographic processes, employment levels, equality, consumer rights, labour productivity, competitiveness, innovations and overall economic growth.

Education is considered an investment in human capital with long-run return horizon. Some researchers (Kotzev et al, 2008) believe that "without government spending on education there will be a shortage of investment in human capital." Without accumulation of knowledge and skills the society and its individual members cannot develop and transform them into physical and financial capital. This is why governments allocate substantial financial resources to the provision of this good through adequate educational infrastructures and mechanisms for control of the educational processes and the related expenses.

Figure 1 shows that since the beginning of the 21st century the total government expenditure on education of the EU Member States has grown with over 40% or about € 200 billion (from € 500 billion in 2001 to slightly more than € 700 billion in 2016).



Source: Author's calculations with data from Eurostat, General government expenditure (GGE) by function (COFOG)

Figure 1. ***Government expenditure on education of the EU Member States in the period 2001–2016***

The rise in public spending on education in the EU, albeit at a slower pace in the first years of the crisis (2008-2009), has led to an increase of EU's GEE-to-GDP ratio (see Table 1), which means that a greater share of GDP is allocated to investments in human capital and other types of activities directly related to education as a public good. Both the GEE-to-GDP (about 5%) and the GEE-to-GGE (between 10 and 11%) ratios remained relatively stable during the whole period (2001-2016). Along with healthcare and social security, education is one of the top priorities of all governments. The size of government expenditure on education both as a nominal value (see Figure 1) and as a ratio to GDP and total public expenditure (see Table 1), has been decreasing over the last 5 to 6 years at the expense of healthcare and social protection.[2]

[2] The comparison of the Eurostat statistics for 2010 and 2016 shows that the GEE-to-GGE ratio decreased with 0.3 p. p. (from 10.5% in 2010 to 10.2% in 2016) while for the same period the expenditure on healthcare rose with 0.6 p. p. (from 14.6% in 2010 to 15.3% in 2016) and the expenditure on social protection rose with 2.4 p. p. (from 38.8% in 2010 to 41.2% in 2016).

Although government expenditure on education (GEE) was growing throughout the whole period (except in 2011, 2013 and 2016), the rate of increase is slowing down.

Table 1
GEE-to-GDP and GEE-to-GGE ratios of the EU Member States in the period 2001–2016.

Year	GEE-to-GDP (%)	GEE-to-GGE (%)
2001	4.9	10.9
2002	5.0	11.1
2003	5.1	11.0
2004	5.0	10.9
2005	5.0	10.9
2006	5.0	11.0
2007	4.9	10.9
2008	4.9	10.7
2009	5.3	10.5
2010	5.3	10.5
2011	5.1	10.5
2012	5.0	10.2
2013	4.9	10.1
2014	4.9	10.2
2015	4.8	10.2
2016	4.7	10.2

Source: Eurostat, General government expenditure by function (COFOG)

Regarding the different levels of education, the Eurostat data shows that about 40% of GEE is allocated to pre-primary and/or primary education and one third is allocated to secondary education. These data confirm the opinion that, with certain assumptions, education could qualify as a public good. The EU Member States allocate about 3/4 of their GEE to the compulsory levels of education in order to include all members of the society. Between 15 and 20% of their GEE is allocated to tertiary education and the remaining 5 to 10% is spent research and development and other educational services. The largest share (about 60%) of the expenditure on education by type of transaction was in the form of 'compensation of employees', 15 % was in the form of 'intermediate consumption', and the rest was in the form of social benefits and current transfers as well as capital investments. Therefore, investments in modern educational systems are made mostly for current transfer and only a small percentage is allocated to capital costs.

3. Research methodology

Previously, the government expenditure on education was analysed only as aggregate spending in all EU Member States. The main purpose of this research is to analyse it for each country in the EU and identify the similarities and differences of their national policies. For this purpose we used a common method known as cluster analysis. With this method the objects (the EU Member States) are classified according to certain criteria into groups known as clusters. The most important stage of clustering is the selection of classification criteria (indicators). Although in theory there is a wide range of indicators that show the role of the state in education, in this research we use the most relevant ones. One of the most significant specific measures of investment in the human capital of a nation in terms of its social dimension (Kazakov, 2001; Buysse, 2002) is the **government expenditure on education as a share of GDP (GEEGDP, %)**. This type of expenditure is differentiated further by level of education and calculates as a share of the general government expenditure in each EU Member State as follows:

- **Government expenditure on pre-primary and primary education as a share of general government expenditure (PPPE, %)**. It includes spending for administration, support and control of pre-primary and primary education, which aims to promote children's prerequisites for growth, development and learning and provides them with initial knowledge and skills for reading, writing and calculus, as well as literacy programs for older people.
- **Government expenditure on secondary education as a share of general government expenditure (SE, %)**. It includes spending for administration, support and control of primary and secondary education, as well as scholarships, grants, student loans and other forms of financial support to students, as well as extra-curricular and extra-school training activities for young and elderly people.
- **Government expenditure on post-secondary non-tertiary education as a share of general government expenditure (PSNE, %).** It includes spending for administration, support and control of educational institutions involved in vocational education (theoretical and practical training) to meet the requirements and needs of the labour market.
- **Government expenditure on tertiary education as a share of general government expenditure (TE, %)**. It includes spending for administration, support and control of higher education institutions in the established degrees and for providing scholarships, loans and grants to students.
- **Government expenditure on education not definable by level as a share of general government expenditure (ENL, %)**. It includes

government spending education that is not definable by level, academic tutoring, seminars, workshops, on-the-job training, and other forms of education that do not lead to acquisition of an educational level.

- **Government expenditure on subsidiary services to education as a share of general government expenditure (SEE, %)**. This group of expenditure includes spending on services concerned with transportation, food, lodging, medical and dental care and related subsidiary services chiefly for students regardless of level.

- **Government expenditure on research and development education as a share of general government expenditure (RD, %)**. This group includes spending for subsidizing theoretical and experimental studies in order to obtain new, fundamental knowledge, applied research aimed at specific and practical purposes and objects as well as experimental studies based on results obtained from previous research and development projects.

- **Government expenditure on education not elsewhere classified (n.e.c.) as a share of general government expenditure (ENEC, %).** This group of expenditure includes funds for administration, coordination, budgeting and monitoring of the entire education policy, curricula, programs, legislative framework, licensing of educational institutions.

Two more indicators were added to the above indicators for government expenditure on education in order to analyse government expenditures by type of transaction and to identify the priority investments in human and physical capital in the sector of education compared to others sectors:

- **Government expenditure on compensation of employees in education as a share of total government expenditure on compensation of employees (CEE, %)**. This group of expenditure includes the wages of employees in the sector of education plus non-wage costs such as social contributions. According to Buysse (2002), these expenditures can be important for the quality of the provided educational services and its share of the total government expenditure on compensation of employees is indicative for the priority given to education relative in the general fiscal policy.

- **Government expenditure on investments in education as a share of the general government expenditure on capital investments (CIE, %)**. This type of expenditure incudes government spending for modernization of the educational infrastructure, including modernization of equipment and facilities, purchase of new equipment and furnishing of educational institutions (creation of specialized workshops, laboratories, offices, sports facilities). The indicator shows the amount of government expenditure on capital investments in the sector of education.

The analysis was based on a non-hierarchical clustering procedure. Using the k-means cluster analysis method the countries were initially

grouped into 3 clusters (countries with high, medium and low priority government spending on education).

4. Research data

The main source of empirical data is Eurostat and, more precisely, the Classification of the Functions of Government (COFOG) in the framework of the European System of National Accounts. Government expenditure on education was grouped according to Eurostat's methodology, which is based on the International Standard Classification of Education (ISCED) plus some additional clusters.

The data covers the period 2001 through 2016, which was divided into two sub-periods because of the global economic crisis in 2007 and 2008. The first period spans from 2001 until the end of 2008 and the second is from 2009 to 2016. After the countries were grouped into clusters, the data for the two sub-periods were compared to identify the degree to which some of them retained their indices during the post-crisis period compared to the pre-crisis period. Cluster analysis requires data on public spending on education to be presented at a given point in time. Due to the incompleteness of the Eurostat database regarding government expenditure by level of education[3] and in order to eliminate some extreme values for certain years (Velichkov & Stefanova, 2018), the average values for the selected sub-period were used. This in no way affects the final results, because the public expenditure on education as a percentage of GDP and as a percentage of total government expenditure (by level of education) change relatively slowly over time.

5. Research results

In order to achieve a better precision in the grouping of the countries, the selected indicators were tested for statistical significance. The results of the test showed that certain indicators (PSNE, RD and ENCE) had to be rejected as statistically insignificant. The clustering was thus performed with

[3] This incompleteness is mainly due to the incremental accession of some countries to the EU, e.g. Latvia (no data are available for the period 2001-2003 and hence the average for the first sub-period was calculated using the reported data for the period 2004-2008), Romania (no data are available for the period 2001-2006, and hence the average for the first sub-period was calculated using the reported data for the period 2006-2008), and Slovakia (no data are available for the period 2001-2002 and hence the average for the first sub-period was calculated using the reported data for the period 2003-2008)

the remaining 8 indicators: GEEGDP, PPPE, SE, TE, ENL, SEE, CEE and CIE (see Table 2).

Table 2

Clustering of the EU Member States in terms of their government expenditure on education

Cluster	Period 2001-2008	Distance from the centroid	Period 2009-2016	Distance from the centroid
I	Slovenia	1.134	Slovenia	2.934
	Portugal	1.986	Portugal	2.090
	Poland	2.088	Poland	2.038
	Latvia	2.553	Latvia	1.984
	the Netherlands	3.349	the Netherlands	1.893
	Luxembourg	3.742	Luxembourg	3.098
	Lithuania	4.151	Lithuania	4.193
	Cyprus	4.559	Cyprus	2.471
	Estonia	4.812	Estonia	4.784
	Belgium	5.092	Belgium	4.982
II	the UK	2.161	the UK	2.144
	Finland	2.800	Finland	2.860
	Romania	2.989	Romania	3.630
	Sweden	3.571	Sweden	4.267
	Denmark	3.911	Denmark	3.359
	Malta	2.136		
	Ireland	2.828		
			Spain	3.054
III	Austria	2.217	Austria	1.469
	France	2.235	France	1.651
	Spain	2.512		
	Slovakia	2.804	Slovakia	2.330
	Czech Republic	2.816	Czech Republic	1.924
	Greece	2.950	Greece	2.742
	Croatia	3.205	Croatia	2.772
	Italy	3.211	Italy	2.533
	Hungary	3.443	Hungary	3.012
	Bulgaria	3.479	Bulgaria	3.480
	Germany	3.741	Germany	3.249
			Malta	4.393
			Ireland	2.450

Source: author's calculations using data from Eurostat, General government expenditure by function (COFOG).

The first cluster includes countries with high-priority government expenditure on education according to the selected indicators. This group comprises 10 EU Member States, including the Baltic States (Lithuania, Latvia, Estonia), Belgium, the Netherlands, Luxembourg, Portugal, Cyprus,

Poland and Slovenia. Four of these countries (Lithuania, Latvia, Estonia and Cyprus) had slightly lower the ratios of total public expenditure to GDP.[4] This emphasize the important role of education in these countries. The composition of this cluster was identical before and after 2008.

The second cluster includes countries with medium-high priority government expenditure on education according to the selected indicators. The core of the cluster is represented by the UK, Finland, Romania, Sweden and Denmark. Malta and Ireland were still members of the cluster until 2008, when they dropped out and Spain was included. Thus, in the first sub-period, the cluster comprised 7, and in the second sub-period 6 EU Member States. Probably many people will be surprised by the fact that Denmark and Sweden were included in this cluster, because these two countries have the largest ratios of public expenditure on education to GDP. However, these countries also have the highest ratios of total public expenditure to GDP (well above the EU average), which indicates a strong state intervention in the economy. Therefore, the "Public expenditure on education to GDP" ratio should not be considered as the sole measure of state intervention in the sector of education. If we consider the total government expenditure on education (aggregate, regardless of the level) as a share of the total public expenditure, we shall see that, for the period 2001-2016, countries such as Estonia, Lithuania, Latvia, Cyprus, Slovenia and Portugal, which fall into the first cluster, ranked above Sweden and Denmark. At the same time, Sweden and Denmark, together with the UK and Finland, are among the EU countries reporting the lowest ratio of compensation of employees in education to total government expenditure on compensation of employees.

The second cluster includes the greatest number of countries. These are EU Member States whose governments are less involved in education than in other sectors of the economy according to the indicators selected above. In the first sub-period, this cluster included 11 countries and in the second - 12. Among them are 4 of the 5 largest economies in the EU (Germany, Italy, France, Spain), as well as Austria, Croatia, Bulgaria, Greece, Hungary , Slovakia and the Czech Republic.

The data on the distances of each EU Member State to the cluster centroids for the two sub-periods (see Table 2) allows us to measure the average intra-cluster distance (Naidenov 2016) in order to determine whether the countries in the cluster converge or diverge. The results show a decrease in the average distance between the countries and the centroid in the first (0.3 pp) and the third cluster (0.298 pp), which means that the convergence among the countries in these clusters during the second period was greater than during the first period. The average distance between the countries and the

[4] On average below 40% for the period 2001–2016 compared to the EU average of 47%.

centroid in the second cluster increases, i.e. there is a trend of divergence among the cluster members in terms of their government expenditures on education.

The clustering of the EU Member States is partially based on the data in Table 3 below. This table shows the indicators already selected and the number of final iteration clusters that resulted from a number of iterations. Note that cluster centroids were calculated after all countries were added to the cluster rather than by consecutive recalculation after the addition of each country.

Table 3

Final cluster centroids

Index	Period 2001–2008			Period 2009–2016		
	Cluster			Cluster		
	I	II	III	I	II	III
GEEGDP %	5.81	5.46	4.58	5.90	5.51	4.67
PPPE %	4.47	4.32	3.20	4.14	4.17	3.11
SE %	5.24	4.09	3.63	4.48	3.67	3.65
TE %	2.47	2.53	1.68	2.47	2.26	1.75
ENL %	0.80	0.44	0.31	0.69	0.39	0.23
SSE %	0.47	0.15	0.65	0.53	0.14	0.61
CEE %	35.22	24.73	29.34	34.82	23.52	29.09
CIE %	14.30	12.54	10.08	13.37	11.25	10.12

Source: author's calculations using data from Eurostat, General government expenditure by function (COFOG)

The data in Table 3 is a good starting point for a more detailed clustering in terms of the various levels of education. It shows that education was considered more important in the countries from the first cluster compared to the other two groups of countries (the second and third clusters) in both sub-periods. In the first sub-period, the countries in Cluster 2 outperformed those in Cluster 1 in terms of government expenditure on tertiary education (TE%), but in the second period their relative positions were reversed. Since 2008, of all members of Cluster 2 only Denmark (+0.5 percentage points) reported an increase in the share of public expenditure on tertiary education in total public expenditure, while in Cluster 1 an increase was reported by Luxembourg (+0.6 p. p.), Lithuania (+0.11 p.p.), Cyprus (+ 0.21 p.p.) and Belgium (+0.15 p.p.).

Cluster 2 countries outperform those in Cluster 3 in 6 of the 8 selected financial indicators during both sub-periods, but are in turn outperformed by Cluster 1 countries in 7 of these indicators. This confirms the assumption that

the governments of Cluster 2 countries give medium-high priority to public expenditure on education. During the second sub-period, Cluster 2 countries spent more money on pre-primary and primary education (PPPE%). On the other hand, Cluster 3 countries (including Bulgaria) were catching up with the first two clusters in terms of expenditure on pre-primary and primary education. From 2007 to 2016 the PPPE% in Bulgaria increased by +0.5 p.p.

The countries in Cluster 3 were leaders in terms of expenditure on ancillary education services. It is worth noting that the countries in this cluster outperformed those in Cluster 2 in both analysed sub-periods in terms of expenditure on compensation of employees in education as a share of total government expenditure on compensation of employees. However, Cluster 3 countries are lagging behind the other two clusters in terms of total government expenditure on education.

The results of the analysis show (Table 3) that on 6 out of the 8 selected indicators the EU countries converge and on only one of the indicators the level of divergence remained the same. The convergence among the three clusters was greatest in terms of government expenditure on primary and secondary education (21.34%) after the crisis compared to the pre-crisis period. Two of the Member States contributing most to this degree of convergence were Hungary and Bulgaria. They are two of the three EU Member States (including the UK) with the highest growth rate of their SE% indicators after the crisis. On the other hand, a significant divergence among the clusters exists only in terms of expenditure on compensation of employees in education as a share of total government expenditure on compensation of employees (3.28%).

Conclusion

The clustering of the EU Member States according to their government expenditure on education leads to the conclusion that the dynamics of the selected indicators was relatively constant before and after the crisis. With very few exceptions, there are no differences within each cluster (as a composition) as well as among the clusters. At the same time, the clusters tend to converge. Despite the crisis, the EU countries continue to allocate a significant part of their government expenditure to education.

Finally, although Bulgaria is among the countries less committed to investing in education, a subsequent analysis, including the years after 2016, may lead to more substantial changes in the country's position, since after 2016, education has been significantly prioritized in the annual budgets.

References

Brusarski, R. (2007). *Teoriya na publichnite finansi*. Sofiya: UI Stopanstvo.

Velichkov, N., & Stefanova, K. (2018). Digitalni umeniya v ES: Klasteren analiz. *Nauchni trudove na UNSS*, (3), pp. 111-122. Retrieved from: http://unwe-research-papers.org/uploads/ResearchPapers/Research%20Papers_vol3_2018_No06_Velichkov,%20Stefanova.pdf.

Zahariev, A. (2001). *Finansovo upravlenie na choveshkite resursi*. Veliko Tarnovo: Izdatelstvo Abagar.

Kazakov, A. (2001). *Choveshkiyat kapital*. Sofia: UI Stopanstvo.

Kotsev, TS., Vladimirova, T., Vladimirov, V., Kirov, S., Gercheva, S., Blagoicheva, KH., Naidenov, L. (2008). *Publichni finansi*. Varna: IK STENO.

Naiidenov, A. (2016). Klasterizatsiya na stranite ot Evropeiskiya sayuz po brutna dobavena stoĭnost, broi zaeti i komponenti na prirasta v brutnata dobavena stoinost. *Ikonomicheski i sotsialni alternativi*, (2), pp. 48-57. Retrieved from: https://www.unwe.bg/uploads/Alternatives/4-Naidenov-2-2016.pdf.

Nenkova, P. (2004). *Taksi i tseni na publichnite uslugi*. Sofia: Izdatelstvo Sibi

Buysse, K.D.L. (2002). Human Capital and Growth in OECD Countries: The Role of Public Expenditure on Education. Retrieved November 16, 2018 from https://ssrn.com/abstract=2094442.

Locatelli, R. (2018). Education as a public and common good: Reframing the governance of education in a changing context. *Education Research and Foresight Working Papers*, 22. Retrieved November 17, 2018 from http://unesdoc.unesco.org/images/0026/002616/261614e.pdf

Moşteanu, T., Cretan, G.C. (2011). Education and the Characteristics of Public Goods. Overlaps and Differences. *Theoretical and Applied Economics*, 562(9), 33-40. Retrieved November 16, 2018 from http://store.ectap.ro/articole/635.pdf.

Mukherjee, A.N. (2007). Public Expenditure on Education: A Review of Selected Issues and Evidence. *Working paper / National Institute of Public Finance and Policy*, 1, 1-29. Retrieved November 17, 2018 from https://www.nipfp.org.in/media/medialibrary/2013/04/wp_2007_hd_51.pdf.

Polcyn, J. (2015). Education as a public good. *Вісник Бердянського університету менеджменту і бізнесу*, 29(1), 32-35. Retrieved November 16, 2018 from http://old.bumib.edu.ua/sites/default/files/visnyk/7_6.pdf.

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