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The Efficiency of Financing the Regional Smart-Specialization Strategies' Implementation from the EU Structural Funds

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Abstract
The paper provides the empirical analysis of the efficiency of financing the regional smart-specialization strategies' implementation from the structural funds in the context of its impact on the improvement of economic wellbeing and prevention of growing regional misbalances in the EU at the NUTS 2 level. It verifies the inverse correlation between the GRP volumes per capita in the EU Member States and the volumes of funding of the smart-specialization activities. The financial resources of the EU structural funds for the implementation of the regional smart-specialization strategies are established to be distributed on a regional basis and to be showing the signs of the aligning policy, which is a reasonable tactic from the viewpoint of the need to secure the balanced spatial development. However, the paper emphasizes that the less developed regions aren't able to fully generate powerful innovations that would boost the economic activity in the smart-specialization domains yet.

Keywords: smart-specialization, strategies', European Structural Funds, financing of regional development, spatial development, regional development in EU

1. Introduction

The regional smart-specialization concept is one of the key elements of forming the EU regional development policy**.** Implementation of the approach is the main component of cooperation in the framework of the European Neighborhood Policy in the context of an opportunity to use the European structural and investment funds. Moreover, promoting the transition to the resource-efficient and the low-carbon economy, smart**-**specialization is an important factor in forming the model of sustainable endogenous growth of the regions.

Smart-specialization also stipulates the intra- and inter-regional inclusive growth, thus boosting the territorial cohesion, supporting structural changes, and offering new and better jobs and social innovations. (Storonyanska, Melnyk M. & Leshchuh, 2020)

Nevertheless, the smart**-**specialization concept has certain flaws and risks, including the growing regional polarization due to the concentration of modern technologies in the more developed regions; inefficient use of money provided by the structural funds to "poorer" regions or countries in the context of economic development, etc.

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2. Literature Review

The range of European scientists devotes their studies to the research of the impact of the financial support granted by the EU structural funds on regional development. Namely, the spatial and sectoral differentiation of the support of innovative companies from the EU funds were examined by Hána, Hellebrandová (2018) on the example of the Czech Republic. (Hána & Hellebrandová, 2018)

Durova (2018) outlined the impact of the coefficient of the structural funds' money absorption on the short-term paces of economic growth in the Central and Eastern European countries in 2008-2015. Based on the regression analysis, the author argues that, in the long run, the financial support of the structural funds generates positive results in the context of regional growth rather slowly and cannot be used as an instrument of a quick (in the short-term period) economic recovery of the regions.

Examining the role of the EU cohesion policy in the socio-economic development of Italian regions, Aiello & Pupo (2012) conclude that structural funds have a positive impact only on certain regions of the country, failing to solve the problems of regional differentiation. (Aiello & Pupo, 2012)

Similar conclusions were made by Startiene, Dumciuviene & Stundziene (2015). Based on the correlation analysis of the relevant statistical data, the researchers emphasize the insignificant impact of financial support provided by the EU structural funds on the economic development of the EU regions.

Lolos (2009) arrived at somewhat other results. He empirically verified the positive impact of the EU structural policy on the growing economic wellbeing of the NUTS-II regions on the example of Greece.

Mohl & Hagen (2011) analyzed the impact of the EU structural funds on the employment for 130 European NUTS-II regions in 1999-2007. The researchers concluded that the qualified population benefited from the EU structural funds.

The paper aims to examine the efficiency of the policy of the European structural funds' support for the smart-specialization strategies' implementation in the EU Member States and their regions.

3. Methodology

The main hypotheses were three assumptions on the impact of financing provided by the European Structural Funds on the intermediate results of functioning of 216 smart-specialization strategies (RIS3) of the EU Member States and regions and the possibility of considering the received results for the third countries that use the smart-specialization concept provisions partially or completely:

Hypothesis one. Regional policy of the European Union is directed at improvement of the economic wellbeing of the regions and prevention of growing regional misbalances in the EU at the NUTS 2 level. Therefore, the financial assistance from structural funds is directed in the first place towards the poorer by economic development regions and Member States.

Hypothesis two. Financial support of the implementation of the smart-specialization strategies in the EU-28 from the European Structural and Investment Funds (ESIF) is

accumulated in the priority smart-specialization sectors according to the goals of regional socio-economic development strategies across the countries of the EU-28 and NUTS 2 regions in 2014-2020.

Hypothesis three. Development of the information and communication technologies (ICT) is the leading smart-specialization priority declared by most regional strategies of the EU Member States, which defines the dynamics and transformation of their socio-economic processes in general. Therefore, the efficiency of financial support from the European Structural and Investment Funds, accompanied by ICT value and GDP growth, should be closely related to the development of information and communication technologies.

4. Results (Hypothesis Testing)

Hypothesis one. Fig. 1 shows the correlation between the volume of the Gross Regional Product (GRP) per capita in 2017 and the volumes of funding of activities implemented under the regional smart-specialization strategies per capita in the 2014-2020 program period.

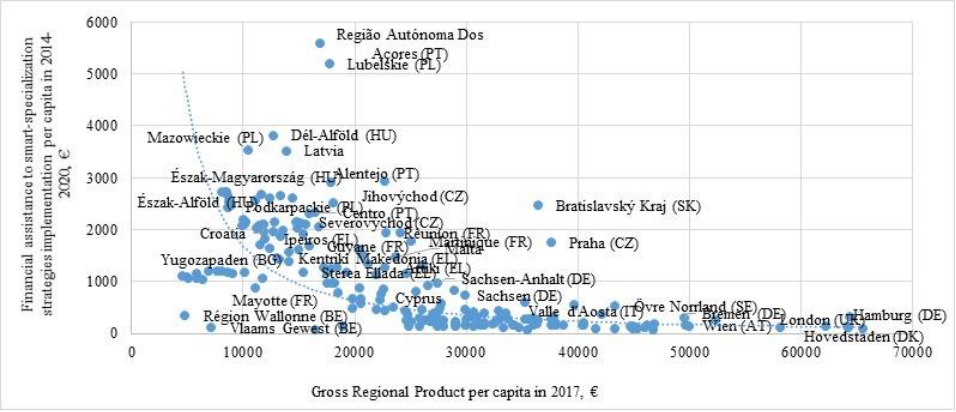

Fig. 1. Dependence between the GRP volumes of the NUTS 2 regions in 2017 and volumes of funding of the smart-specialization strategies' implementation in the regions in 2014-2020, € per capita
Note: Calculated based on the statistical data [8-10]

According to Fig. 1, the largest funding was transferred to the NUTS 2 level with low and average economic development and revenues ranging within € 10 - 25 thous. However, a range of regions with revenues ranging within € 20 - 40 thous. spend the least to support the smart-specialization activities from public funds. It is explained by the fact that the highly developed countries have already formed innovative ecosystems and are ranked among the leaders by the innovative development in the EU.

The same pattern of smart-specialization priorities funding is peculiar to the countries of the EU-28: the largest expenditures are observed for Lithuania (€ 3.5 thous.), Estonia, Slovak Republic, Hungary, Portugal, Czech Republic, Poland, Croatia, Slovenia, and Greece. Meanwhile, the leaders by economic development with GRP per capita within € 30 - 60 thous. receive three times less than the abovementioned countries (Fig. 2).

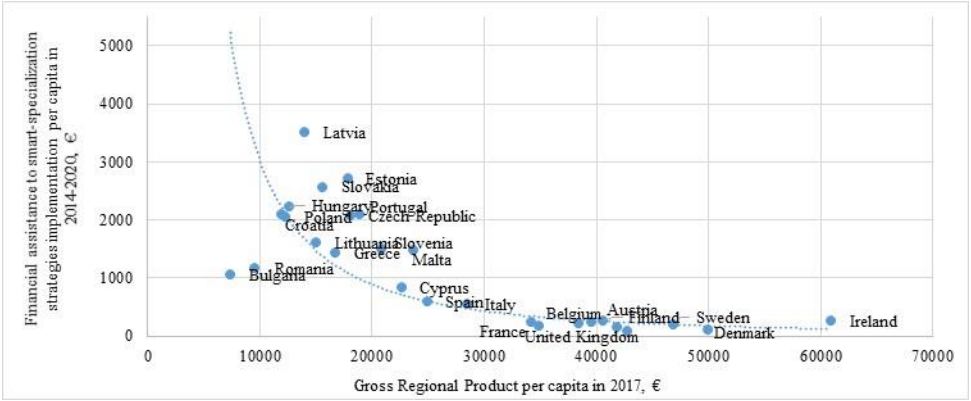

Fig. 2 Dependence between the GRP volumes of the EU Member States in 2017 and volumes of funding of the smart-specialization strategies' implementation in the states in 2014-2020, € per capita
Note: Calculated based on the statistical data [8-10]

Therefore, the first hypothesis is verified and empirically proved. Dependence between the GRP volumes of the EU Member States and volumes of funding of the smart-specialization activities is inverse, which is related to the principles of funding of the EU sectoral policies.

Hypothesis two. The analysis of regional innovative development strategies across the EU-28 and NUTS 2 regions in 2014-2020 contributed to outlining the 20 priority sectors and directions of the smart-specialization: agrifood, biotechnologies, healthcare; ICT; nanosciences and nanotechnologies, materials, new production technologies, nanotechnology integration for certain applications; energy, environmental protection; air transport, space industry, automotive industry, railway transport, water transport, municipal transport, and accessibility; socio-economic and humanitarian sciences; security, tourism, and innovative services; creative industries (Annex A).

The pilot projects on smart-specialization introduction into 2020 Regional Socio-Economic Development Strategies in some domestic oblasts contributed to comparison of European priorities with the Ukrainian ones. The received results show not only the choice of different priorities by the countries and their regions but also that the number of priorities is different. Thus, out of twenty general priorities selected for the analysis, 10 prevail in Austria, while in France – 18, Italy – 17, Denmark, Germany – 7, Hungary – 5, Luxemburg – 3, Ukraine – 9. The variety of the number of priorities depends on the size and number of population in a country, and on the volumes of funding, which often is inversely proportional to the number of population of the country. Moreover, 216 EU regions have the smart-specialization strategies at the NUTS 2 level. Some countries have both regional and national strategies, while some countries – only national (8).

The qualitative aspect of priorities selection shows not only the country's specialization but also the perspectives expected from the innovative development of a certain economic sector. By the criterion of the most common priorities both in national and regional (NUTS 2 level) smart-specialization strategies among the EU countries in 2014-2020, we have determined 6 most common or key smart-specialization domains. They are the following: 1. Agribusiness, food industry, and biotechnology. 2. Environment / Green

technology, energy. 3. Transport, mobility, logistics. 4. ICT. 5. Life sciences, biotechnology, pharmacy, healthcare. 6. Material science and intellectual production. These priorities are closely linked with the threefold goal of the Europe 2020 Strategy. RIS3 implements the threefold goal of the Europe 2020 Strategy: smart growth based on technological and social innovations; sustainable growth through the introduction of green technologies and new biotechnologies in economic activity; and inclusive growth due to implementation of social innovations, employment stimulation, and promotion of access to innovations for everyone without exceptions.

Based on the list of these priority domains for the EU countries, we have compared the RIS3 priority domains for the countries that aren't the EU members. The analysis shows the clear correlations of their key smart-specialization areas with the priorities selected in the EU countries (Table 1).

Table 1. Strategic priorities of SMART-specialization of non-EU countries until 2020

Priorities	**National level**	**Regional level**
Agroculture, food and biotechnology	**Serbia (RS), Montenegro (ME), Moldova (MD), Bosnia and Herzegovina (BA), Albania (AL)**	Cherkasy (UA), Kharkiv (UA), Kocaeli Subregion (TR), Vojvodina (RS), Hedmark (NO), Oppland (NO), Vestfold (NO), Rogaland (NO), Sogn og Fjordane (NO), Møre og Romsdal (NO), Sør-Trøndelag (NO), Nord-Trøndelag (NO), Nordland (NO), Troms (NO), Finnmark (NO)
Environmental/Green technology, energy	**Ukraine (UA), Montenegro (ME), Moldova (MD), Bosnia and Herzegovina (BA), Serbia (RS), Albania (AL)**	Cherkasy (UA), Kharkiv (UA), Kocaeli Subregion (TR), Vojvodina (RS), Oslo (NO), Akershus (NO), Østfold (NO), Buskerud (NO), Vestfold (NO), Aust-Agder (NO), Vest-Agder (NO), Sogn og Fjordane (NO), Møre og Romsdal (NO), Finnmark (NO)
Transport, traffic, mobility, logistics		Kocaeli Subregion (TR), Buskerud (NO)
ICT	**Ukraine (UA), Serbia (RS), Montenegro (ME), Сербія (RS), Albania (AL)**	Kharkiv (UA), Vojvodina (RS), Oslo (NO), Akershus (NO), Aust-Agder (NO), Vest-Agder (NO)
Life science, biotech, pharma, health	**Ukraine (UA), Montenegro (ME), Moldova (MD), Bosnia and Herzegovina (BA), Albania (AL)**	Kharkiv (UA), Oslo (NO), Akershus (NO), Buskerud (NO), Møre og Romsdal (NO), Troms (NO)
Material sciences and intelligent manufacturing	**Ukraine (UA), Serbia (RS), Montenegro (ME), Moldova (MD), Albania (AL)**	Kharkiv (UA), Kocaeli Subregion (TR), Vojvodina (RS), Oppland (NO), Rogaland (NO), Hordaland (NO), Møre og Romsdal (NO), Sør-Trøndelag (NO), Nord-Trøndelag (NO), Nordland (NO)

It proves the efficiency of the European integration processes in the third countries, which

fulfill their obligations and implement the activities according to the best foreign practices. Moreover, the EU-Ukraine Association Agreement defines the need to bring domestic approaches to the forming of innovative policy in accordance with the European ones. Furthermore, such strategies (RIS3) are among the preconditions of receiving funds from the EU structural funds for projects implementation (*Determining of key smart-specialization,* 2011).

However, not only the right choice of selected priorities secures the efficiency of regional policy in the context of smart-specialization but also funding of activities and projects directed at improving the innovativeness and competitiveness of goods and services. Funding distribution was assessed based on the data of funds supporting the EU regional policy: ERDF (European Regional Development Fund), ESF (European Social Fund), CF (Cohesion Fund), EAFRD (European Agricultural Fund for Rural Development), EMFF (European Maritime and Fisheries Fund), YEI (Youth Unemployment Initiative). It is worth mentioning that the coefficient of variation of the total funding amounts to 111%, which shows a very different and unequal distribution of financial resources (Annex B).

The differentiation and unequal distribution of financial resources are explained by the fact that the sums allocated for the support of the smart-specialization projects in various EU countries are very different because the socio-economic development level is extremely differentiated even within one country. 42% of the total funding planned for regional policy projects amounting to € 630.330 billion accounts for the European Regional Development Fund. The activity of other funds is defined by the purpose-oriented use of expenditures by certain domains and the selective nature of funding. Thus, the Cohesion Fund expenditures are directed at support of the regional development projects of the countries that are averagely or poorly economically developed compared to other EU countries. For example, Poland accounts for 36 % of all planned expenditures of the Fund among all other EU-28 countries.

Meanwhile, it is worth mentioning that there is a strong differentiation between the planned, approved, and actual funding of the priority directions under the national and regional smart-specialization strategies. Thus, Table. 2 shows that Hungary is the only EU country to receive additional funding in 2014-2020 that is 10 p.p. more than planned, while all the other countries have an approved funding of 69 % (Italy, Luxemburg) to 97 % (Ireland).

The level of actual costs is even lower (as of 2019, only a year remaining till the period ends). 23 EU-28 countries haven't received even a half of planned funding. Spain has received 27%, and Ireland 68% of planned funding. In such funding conditions, there is a risk of failure to implement strategic activities related to support of innovative projects, and therefore – the low strategic goals achievement performance or inefficient payments throughout the period. This should be taken into account in planning the following 2021-2027 program period.

Table 2. Total funding of EU-28 countries from European Strutural and Investmetn Funds (ESIF) in 2014-2020

EU-28	Volume of financing, million euros				
	planned financing	confirmed funding	including	actual costs	including
			share of the planned amount of funding, %		share of the planned amount of funding, %
Austria	10624,97	7828,69	74	6065,67	57
Belgium	6092,93	5242,18	86	2118,33	35
Bulgaria	11714,02	8825,4	75	4380,56	37
Croatia	12653,12	10348,97	82	3538,24	28
Cyprus	1169,71	1061,34	91	509,97	44
Czech Republic	32628,15	24536,66	75	11637,07	36
Denmark	2316,56	1738,54	75	873,66	38
Estonia	5778,98	4648,17	80	2557,44	44
Finland	8435,16	7730,6	92	5754,32	68
France	45986,01	35449,14	77	21230,27	46
Germany	44698,67	36089,91	81	19638,11	44
Greece	26156,21	21926,23	84	7760,86	30
Hungary	29643,3	32599,53	110	11278,87	38
Ireland	6139,65	5942,46	97	3657,06	60
Italy	75130,73	51894,96	69	23123,57	31
Latvia	6907,95	5989,99	87	2933,09	42
Lithuania	9997,43	7990,6	80	4316,78	43
Luxembourg	456,42	313,61	69	263,77	58
Malta	1022,17	985,12	96	406,34	40
Netherlands	3802,51	3424,25	90	1674,69	44
Poland	104918,16	82888,54	79	36873,32	35
Portugal	33047,25	31030,12	94	14680,91	44
Romania	36742,06	32177,05	88	11369,33	31
Slovakia	19351,82	15452,17	80	5718,02	30
Slovenia	4955,43	3771,32	76	1801,51	36
Spain	56291,75	33627,42	60	15077,64	27
Sweden	7099,45	5931,18	84	3926,62	55
United Kingdom	26469,44	21142,46	80	10607,72	40

Note: Calculated based on the statistical data [8]

Similarly, there is a differentiation in projects funding under the smart-specialization strategies of the NUTS 2 level in European states (Annex C). Our estimations across regions bring us to the conclusion that the industrially developed regional metropolitan areas of the second level, capital regions (typically in the Central, Central-Eastern, and Southern Europe, with average development level: Austria, Vienna – 23%, Bulgaria, Yugozapaden – 30%, Greece, Attica – 31%, Poland, Katowice – 11%), and poorly economically developed old industrial regions, or tourism-oriented regions (Belgium,

Wallonia –31%, Italy, Sicily – 18%, France, overseas department Reunion – 11%, Spain, Andalusia – 24%) have the priority in funding distribution.

With funding directions so drastically differentiated on a regional basis, having analyzed 216 RIS 3, we can confirm the territorial projection of the smart-specialization strategies and their unique nature deriving from spatial and sectoral approaches.

Meanwhile, evaluation of the funding efficiency of the priority smart-specialization directions, defined as the dependence between the GDP growth in 2014-2018 per € 1 of funding granted to the priority smart-specialization directions and the volumes of GRP per capita in 2017, shows the low level of growth efficiency for regions that have larger funding shares in their countries.

Therefore, the accumulation of funds on priorities is a legitimate tactic because it provides an opportunity to concentrate on important directions with the attraction of businesses and the community to support strategic priorities. Nevertheless, funding distribution on a regional basis shows the signs of alignment policy, which is partially reasonable. However, less developed regions aren't able to generate powerful innovations that would boost GDP growth yet, so it is worth using a complex and other funding sources and tools, as well as public support measures that secure the improvement of the institutional and infrastructural framework of innovative development. The hypothesis is verified.

Hypothesis three. The ICT sector in the EU-28 countries is the key factor that promotes the introduction of innovative solutions in most social activity domains and changes in business processes organization. Acknowledging the importance of ICT for the development of the EU's socio-economic system in terms of human and economic capacity increase, its development was defined in the Digital Agenda for Europe as one of seven main priorities of the Europe 2020 Strategy and mentioned in the 2030 Agenda for Sustainable Development as one of the key elements for the EU Member States to improve the efficiency of achieving sustainable goals.

The ICT sector is one of the most dynamic sectors of the EU economic system with high R&D intensity and productivity that is higher than in the economy in general. In 2016, the share of the ICT sector in total EU value added was 4.0%, in total employment – 2.6%, in R&D budgetary funding – 15.6%, in the total number of scientific researchers – 18.2%. Among the EU-28 countries, the highest share of ICT in the total value added in 2016 was in Ireland, Malta, Sweden, Finland, Hungary, and Romania (all above 5%). In terms of employment in ICT, the highest share in total number of employed among the EU-28 was in Malta, Estonia, Hungary, Ireland, Finland, Luxemburg (all above 3.6%). In 2006-2016, the value added in ICT was observed for almost all EU-28 countries (excluding Finland and Greece), while Poland, Bulgaria, and Denmark showed the highest growth paces (all above 7%) (*The 2019 Predict Key Facts Report*, 2019).

The analysis displays that there is a close enough relationship between the efficiency of financial support of smart-specialization priorities in the EU Member States and the level of their ICT sector development (coefficient of correlation R=-0.56) to claim the fact that the higher efficiency of financial support under national and regional smart-specialization strategies is the factor and simultaneously the result of the higher ICT development level (Fig. 5).

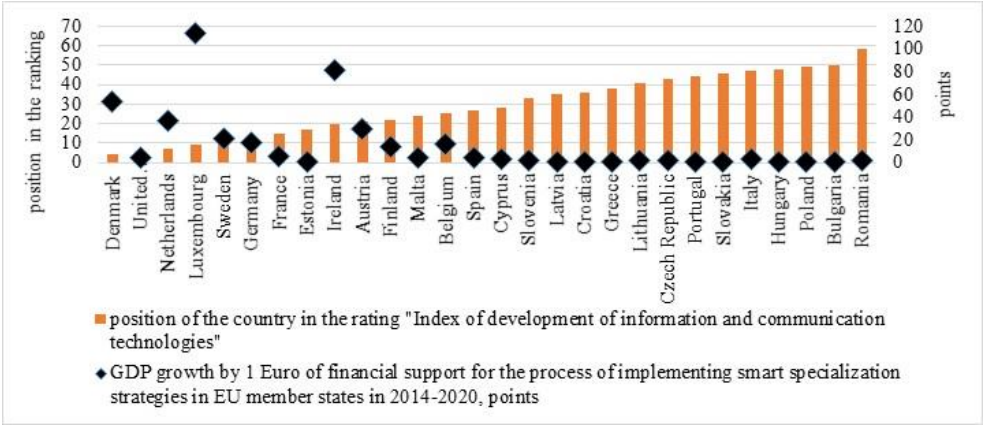

Fig. 5. The relationship between the effectiveness of financial support priorities smart specialization in the EU-28 and the level of development ICT sector (2018 rating)
Note: Calculated based on the statistical data [12]

It is obvious that a complex of various factors (including the financial support of the smart-specialization strategies) based on national and regional specifics, which defines the level of their activity and structural peculiarities, influences the ICT development in the EU-28. Namely, among the EU-28 countries with the highest efficiency of financial support of the smart-specialization priorities in the analyzed period, Austria, Ireland, and the Netherlands had achieved the best progress by the ICT development, and in 2018, they managed to improve their positions by the ICT Development Index (IDI) [13] by +4,+2, and +1 position compared to 2014. In 2018, Cyprus, Malta, and Croatia managed to achieve the best progress among the EU-28 by the level of ICT development (+25, +6, and +6 positions respectively), having been in the cluster of 19 countries with the lowest rates of efficiency of financial support granted to the smart-specialization priorities in the analyzed period. However, the Luxemburg's rankings as the country with the highest efficiency of financial support of the smart-specialization priorities among the EU-28 fell by 3 positions. The same applies to Denmark (-2 positions), Finland (-10 positions), and Sweden (-6 positions), which are characterized by above-average levels of financial support efficiency.

Other hypotheses (results of previous research). In addition to the mentioned hypotheses, the authors proposed and verified the following hypotheses in their previous research (Melnyk , Shchehlyuk, Leshchukh, Yaremchuk, 2020):

1. Financial support of activities carried out in the framework of the smart strategies implementation in the EU-28 provided by the European structural and investment funds (ESIF) in 2014-2020 was accompanied by the corresponding positive dynamics of agricultural development, food production, and biotechnology growth. Namely, the direct correlation dependence was established between a) the growth paces of agricultural output per capita and volumes of financial support of smart-specialization strategies implementation; b) the growth paces of agricultural output per €1 of funding and paces of agricultural output per capita *(coefficient of correlation R= 0.55).*
2. The efficiency of the EU regional policy regarding the financial support of

environmental technologies, energy efficiency, and transport, mobility, and logistics is verified by the development of the transport infrastructure, energy-efficient technologies, renewable energy, and improvement of the environmental situation *(coefficient of correlation R=0.67)*, decline in CO_2 emission by new vehicles *(coefficient of correlation R= -0.57)*.

3. The hypothesis regarding the growing paces of GRP volumes per capita in 2014-2020 due to financial support of smart priorities "material science" and "smart production" is partially confirmed because the innovative activity is risky, and it requires high expenditures at various stages of its implementation. Therefore, the authors suggest to boost innovative entrepreneurship more actively and develop interregional initiatives like innovative clusters for the synergetic combination of financial and human capital, and development of innovative networks.

4. The efficiency of financial support of implementing the smart-priority "medicine, pharmacy, healthcare" in 2014-2020 is confirmed by a) gradual growth of life expectancy at birth; b) some decline in mortality from communicable diseases; c) growing share of the population that evaluate the level of their health as "good" and "very good".

5. Conclusion

The research contributed to detecting the substantial differentiation and unequal distribution of financial resources of the European structural funds caused by significant differentiation of the EU regions' socio-economic development even within a single state. Moreover, there is an essential differentiation between the planned, approved, and actual funding received for the priority directions under the national and regional smart-specialization strategies.

Evaluation of the funding efficiency of the priority smart-specialization directions, defined as the dependence between the GDP growth in 2014-2018 per € 1 of funding granted to the priority smart-specialization directions and the volumes of GRP per capita in 2017, shows the low level of growth efficiency for regions that are financially supported by the governments of their states in addition to the structural funds (basically, the regions with lower economic development level). Therefore, financial assistance to the smart specialization priorities, on the one hand, allows concentrating resources on the competitive advantages of a certain region or state. Yet, on the other hand, the poorly developed regions aren't able to generate powerful innovations that would boost GDP growth yet. So it is worth combining the financial support granted by the EU structural funds with other funding sources and tools, and with the public promotion of improvement of the regional development's institutional and infrastructural framework.

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Annex A. Key areas of smart specialization in the priority areas of regional development strategies for the EU-28 and in Ukraine (2014-2020)

Countries \ Key industry	Agriculture	Biotechnology	Healthcare	ICT	Nanosciences and nanotechnologies	Materials	New product technologies	Integration of nanotechnologies for individual applications	Energy	Environmental protection	Air transport	Space industry	Automotive industry	Railway transport	Water transport	Urban transport and economics	Social and economic accessibility науки	Security	Tourism and innovative services	Creative industries
Austria	●	●		●		●			●	●						●	●	●	●	
Belgium	●	●	●	●	●	●				●	●	●								●
Bulgaria	●	●	●	●							●					●				●
Cyprus	●		●	●			●		●				●		●	●				
Czech Republic	●	●			●		●	●		●	●	●		●		●	●			
Denmark	●		●	●					●	●					●				●	●
Estonia	●	●	●	●		●	●											●		
Finland	●	●	●	●		●			●	●				●				●	●	●
France	●	●	●	●	●	●	●		●	●	●	●	●	●	●	●	●		●	●
Germany	●		●	●					●	●						●		●		
Greece	●	●	●		●	●			●	●						●			●	●
Hungary	●		●				●									●	●			
Ireland	●		●	●		●	●								●	●				

Countries \ Key industry	Agriculture	Biotechnology	Healthcare	ICT	Nanosciences and nanotechnologies	Materials	New product technologies	Integration of nanotechnologies for individual applications	Energy	Environmental protection	Air transport	Space industry	Automotive industry	Railway transport	Water transport	Urban transport and economics	Social and economic accessibility науки	Security	Tourism and innovative services	Creative industries
Italy	●	●	●	●		●	●		●	●	●	●	●		●	●	●	●	●	●
Latvia		●	●	●		●	●	●	●	●				●		●				
Lithuania	●	●	●	●		●	●									●	●			
Luxembourg			●	●			●													
Malta	●		●	●			●	●			●	●			●	●	●			
Netherlands	●	●	●	●			●		●	●						●	●		●	
Poland	●	●	●	●		●			●	●						●				
Portugal	●	●	●	●		●	●		●	●	●	●	●		●	●			●	●
Romania					●	●	●	●		●	●				●	●	●	●		
Slovakia		●				●	●	●	●	●						●	●	●		
Slovenia		●		●	●	●	●	●		●	●					●	●			
Spain	●	●	●	●		●			●	●	●		●		●	●			●	●
Sweden	●	●	●	●		●	●		●	●	●					●			●	●
United Kingdom	●			●					●		●	●	●				●			●
Croatia	●	●	●				●		●	●					●	●		●		
Ukraine	●	●	●	●		●			●	●	●	●								

Note: composed for[1]

Annex B. Volumes of the planned and actual funding of the EU-28 countries from European Structural and Investment Funds (ESIF) for 2014-2020

EU-28	Planned funding, million euros						Total	Share of use,% (as of 2019)
	ERDF**	ESF**	CF**	EAFRD**	EMFF**	YEI**		
Austria	2037,48	875,74	0	7697,82	13,93	0	10624,97	57
Belgium	2331,16	2174,39	0	1325,98	68,59	192,8	6092,93	35
Bulgaria	4179,26	1721,13	2680,36	2908,89	104,27	120,12	11714,02	37
Croatia	5084,12	1664,4	2952,65	2383,29	344,15	224,51	12653,47	28
Cyprus	352,82	134,48	346,9	243,31	52,72	39,47	1169,69	44
Czech Republic	17355,61	4202,56	7228,17	3771,05	41,16	29,6	32628,15	36
Denmark	399,23	410,95	0	1198,73	307,64	0	2316,56	38
Estonia	2458,52	682,2	1514,96	994,17	129,13	0	5778,36	44
Finland	1583,95	1036,53	0	5673,79	140,89	0	8435,16	68
France	17564,46	9807,09	0	16698,35	775,21	1138,36	45983,48	46
Germany	17783,68	12539,92	0	14120,88	286,13	0	44730,61	44
Greece	10971,27	5039,87	3841,96	5195,3	522,89	585	26156,3	30
Hungary	12612,45	5611,33	7088,76	4168,13	50,91	108,31	29639,9	38
Ireland	821,55	952,74	0	3921,66	239,27	204,44	6139,65	60
Italy	33518,77	17431,45	0	20912,94	979,5	2288,07	75130,73	31

[1] Smart Specialisation Platform. European Commission. Retrieved from: https://s3platform.jrc.ec.europa.eu [accessed: May 27, 2020].

EU-28	Planned funding, million euros						Total	Share of use,% (as of 2019)
	ERDF**	ESF**	CF**	EAFRD**	EMFF**	YEI**		
Latvia	2825	717,11	1587,55	1531,6	183,55	63,14	6907,95	42
Lithuania	4119,31	1288,83	2410,49	2027,06	82,21	69,17	9997,07	43
Luxembourg	48,17	40,11	0	368,14	0	0	456,42	58
Malta	474,94	132,37	256,17	129,77	28,93	0	1022,17	40
Netherlands	1372,21	1030,77	0	1271,26	128,85	0	3803,1	44
Poland	47501,86	15205,82	27299,99	13612,21	710,51	586,94	104917,3	35
Portugal	14898,79	8817,48	3366,76	4971,5	502,47	489,89	33046,89	44
Romania	12951,83	5433,97	8158,82	9644,99	223,54	328,91	36742,06	31
Slovakia	9516,09	2478,94	5009,84	2099,2	17,1	229,87	19351,03	30
Slovenia	1823,58	898,46	1075,35	1107,15	30,17	20,73	4955,43	36
Spain	29247,17	10273,77	0	12272,92	1558,28	3015,18	56367,31	27
Sweden	1895,95	1439,28	0	3458,55	173,18	132,49	7099,45	55
United Kingdom	10290,69	8694,5	0	6636,49	309,99	538,35	26470,02	40

Note: Calculated based on the statistical data[2]

**ERDF – European Regional Development Fund; ESF – European Social Fund; CF – Cohesion Fund; EAFRD European Agricultural Fund for Rural Development; EMFF – European Maritime and Fisheries Fund; YEI – Youth Unemployment Initiative.

Annex C. Total financial support for the implementation of smart specialization strategies in the EU-28 and regions (NUTS 2) in 2014-2020

EU-28	million EUR	Share, %	EU-28	million EUR	Share, %
Austria	**1260**	**100,00**	**Finland**	**1382**	**100,00**
Wien (AT)	284	22,54	Helsinki-Uusimaa (FI)	397	28,73
Niederösterreich (AT)	259	20,56	Länsi-Suomi (FI)	355	25,69
Oberösterreich (AT)	196	15,56	Pohjois- Ja Itä-Suomi (FI)	336	24,31
Steiermark (AT)	177	14,05	Etelä-Suomi (FI)	288	20,84
Tirol (AT)	98	7,78	Åland (FI)	5	0,36
Kärnten (AT)	80	6,35	**France**	**15577**	**100,00**
Salzburg (AT)	73	5,79	Réunion (FR)	1658	10,64
Vorarlberg (AT)	47	3,73	Île De France (FR)	1201	7,71
Burgenland (AT)	45	3,57	Nord - Pas-De-Calais (FR)	1181	7,58
Belgium	**2328**	**100,00**	Rhône-Alpes (FR)	1008	6,47
Région Wallonne (BE)	1245	53,48	Aquitaine (FR)	949	6,09
Vlaams Gewest (BE)	717	30,80	Provence-Alpes-Côte D'azur (FR)	886	5,69
Région De Bruxelles-Capitale/Brussels Hoofdstedelijk Gewest (BE)	366	15,72	Guadeloupe (FR)	820	5,26
Bulgaria	**7471**	**100,00**	Martinique (FR)	650	4,17
Yugozapaden (BG)	2208	29,55	Languedoc-Roussillon(FR)	640	4,11
Yuzhen Tsentralen (BG)	1502	20,10	Pays De La Loire (FR)	568	3,65
Yugoiztochen (BG)	1080	14,46	Bretagne (FR)	560	3,60
Severoiztochen (BG)	990	13,25	Guyane (FR)	480	3,08
Severen Tsentralen (BG)	860	11,51	Picardie (FR)	457	2,93
Severozapaden (BG)	831	11,12	Midi-Pyrénées (FR)	442	2,84
Croatia	**8608**	**100,00**	Haute-Normandie (FR)	417	2,68
Cyprus	**726**	**100,00**	Centre (FR)	413	2,65

[2] European Structural and Investment Funds. European Commission. Retrieved from: https://cohesiondata.ec.europa.eu [accessed: May 27, 2020].

Czech Republic	**21914**	**100,00**	Alsace (FR)	382	2,45
Jihovýchod (CZ)	3567	16,28	Poitou-Charentes (FR)	362	2,32
Severovýchod (CZ)	3211	14,65	Franche-Comté (FR)	343	2,20
Stredni Cechy (CZ)	2756	12,58	Auvergne (FR)	342	2,20
Stredni Morava (CZ)	2595	11,84	Champagne-Ardenne (FR)	321	2,06
Moravskoslezsko (CZ)	2588	11,81	Lorraine (FR)	320	2,05
Jihozápad (CZ)	2564	11,70	Basse-Normandie (FR)	315	2,02
Severozápad (CZ)	2381	10,87	Bourgogne (FR)	314	2,02
Praha (CZ)	2252	10,28	Mayotte (FR)	229	1,47
Denmark	**552**	**100,00**	Limousin (FR)	183	1,17
Hovedstaden (DK)	171	30,98	Corse (FR)	136	0,87
Midtjylland (DK)	117	21,20	**Germany**	**19580**	**100,00**
Syddanmark (DK)	117	21,20	Sachsen (DE)	3005	15,35
Sjælland (DK)	94	17,03	Nordrhein-Westfalen(DE)	2637	13,47
Nordjylland (DK)	53	9,60	Sachsen-Anhalt (DE)	2119	10,82
Estonia	**3566**	**100,00**	Thüringen (DE)	1780	9,09
Bayern (DE)	1466	7,49	Piemonte (IT)	1463	4,50
Mecklenburg-Vorpommern (DE)	1460	7,46	Sardegna (IT)	1089	3,35
Brandenburg (DE)	1430	7,30	Basilicata (IT)	749	2,30
Niedersachsen (DE)	1330	6,79	Liguria (IT)	581	1,79
Baden-Württemberg (DE)	1024	5,23	Abruzzo (IT)	487	1,50
Berlin (DE)	983	5,02	Marche (IT)	469	1,44
Hessen (DE)	633	3,23	Friuli-Venezia Giulia (IT)	391	1,20
Rheinland-Pfalz (DE)	522	2,67	Umbria (IT)	379	1,17
Schleswig-Holstein (DE)	521	2,66	Bolzano (IT)	194	0,60
Saarland (DE)	265	1,35	Trento (IT)	159	0,49
Bremen (DE)	205	1,05	Molise (IT)	147	0,45
Hamburg (DE)	201	1,03	Valle d'Aosta (IT)	74	0,23
Greece	**15402**	**100,00**	**Latvia**	**6796**	**100,00**
Attiki (EL)	4715	30,61	**Lithuania**	**4489**	**100,00**
Kentriki Makedonia (EL)	2690	17,47	**Luxembourg**	**48**	**100,00**
Dytiki Ellada (EL)	1076	6,99	**Malta**	**698**	**100,00**
Thessalia (EL)	1051	6,82	**Netherlands**	**1320**	**100,00**
Anatoliki Makedonia kai Thraki (EL)	1021	6,63	West-Nederland (NL)	584	44,24
Kriti (EL)	991	6,43	Zuid-Nederland (NL)	317	24,02
Peloponnisos (EL)	797	5,17	Oost-Nederland (NL)	248	18,79
Sterea Ellada (EL)	650	4,22	Noord-Nederland (NL)	171	12,95
Ipeiros (EL)	605	3,93	**Poland**	**77487**	**100,00**
Dytiki Makedonia (EL)	548	3,56	Slaskie (PL)	8840	11,41
Voreio Aigaio (EL)	443	2,88	Mazowieckie (PL)	8206	10,59
Notio Aigaio (EL)	425	2,76	Malopolskie (PL)	6748	8,71
Ionia Nisia (EL)	392	2,55	Wielkopolskie (PL)	6422	8,29
Hungary	**21785**	**100,00**	Dolnoslaskie (PL)	5635	7,27
Észak-Alföld (HU)	3955	18,15	Lubelskie (PL)	5209	6,72
Közép-Magyarország (HU)	3530	16,20	Lodzkie (PL)	5124	6,61
Dél-Alföld (HU)	3381	15,52	Podkarpackie (PL)	5059	6,53
Észak-Magyarország (HU)	3083	14,15	Pomorskie (PL)	4494	5,80
Közép-Dunántúl (HU)	2814	12,92	Kujawsko-Pomorskie (PL)	4283	5,53
Nyugat-Dunántúl (HU)	2619	12,02	Warminsko-Mazurskie(PL)	3737	4,82
Dél-Dunántúl (HU)	2403	11,03	Zachodniopomorskie (PL)	3595	4,64
Ireland	**1224**	**100,00**	Swietokrzyskie (PL)	3113	4,02
Southern and Eastern (IE)	766	62,58	Podlaskie (PL)	2853	3,68
Border Midland And Western (IE)	458	37,42	Lubuskie (PL)	2105	2,72
Italy	**32527**	**100,00**	Opolskie (PL)	2065	2,66
Sicilia (IT)	5827	17,91	**Portugal**	**21514**	**100,00**

Campania (IT)	5651	17,37	Norte (PT)	8258	38,38
Puglia (IT)	5087	15,64	Centro (PT)	5205	24,19
Calabria (IT)	2465	7,58	Lisboa (PT)	3271	15,20
Lombardia (IT)	2101	6,46	Alentejo (PT)	2072	9,63
Lazio (IT)	1514	4,65	Região Autónoma Dos Açores(PT)	1363	6,34
Veneto (IT)	1352	4,16	Algarve (PT)	708	3,29
Toscana (IT)	1200	3,69	Região Autónoma Da Madeira (PT)	637	2,96
Emilia-Romagna (IT)	1146	3,52			
Romania	**22776**	**100,00**	Islas Baleares (ES)	519	1,87
Nord-Est (RO)	3702	16,25	La Rioja (ES)	408	1,47
Sud - Muntenia (RO)	3531	15,50	Comunidad Foral De Navarra (ES)	263	0,95
Nord-Vest (RO)	2996	13,15	Cantabria (ES)	254	0,92
Sud-Est (RO)	2875	12,62	Ciudad Autónoma De Melilla (ES)	82	0,30
Centru (RO)	2661	11,68	**Sweden**	**1970**	**100,00**
Bucuresti – Ilfov (RO)	2586	11,35	Västsverige (SE)	297	15,08
Sud-Vest Oltenia (RO)	2325	10,21	Stockholm (SE)	282	14,31
Vest (RO)	2099	9,22	Övre Norrland (SE)	274	13,91
Slovakia	**13968**	**100,00**	Norra Mellansverige (SE)	262	13,30
Západné Slovensko (SK)	4737	33,91	Östra Mellansverige (SE)	250	12,69
Východné Slovensko (SK)	4150	29,71	Sydsverige (SE)	237	12,03
Stredné Slovensko (SK)	3474	24,87	Mellersta Norrland (SE)	202	10,25
Bratislavský Kraj (SK)	1606	11,50	Småland och öarna (SE)	164	8,32
Slovenia	**3100**	**100,00**	**United Kingdom**	**11938**	**100,00**
Spain	**27730**	**100,00**	Wales (UK)	2466	20,66
Andalucía (ES)	6558	23,65	South East (England)(UK)	1315	11,02
Cataluña (ES)	3436	12,39	Scotland (UK)	1147	9,61
Comunidad De Madrid (ES)	2520	9,09	London (UK)	1145	9,59
Comunidad Valenciana (ES)	2252	8,12	North West (England) (UK)	967	8,10
Galicia (ES)	2069	7,46	East Of England (UK)	892	7,47
Canarias (ES)	1892	6,82	South West (England) (UK)	804	6,73
Castilla-La Mancha (ES)	1351	4,87	West Midlands (England) (UK)	762	6,38
Castilla Y León (ES)	1199	4,32	Yorkshire and The Humber (UK)	728	6,10
Extremadura (ES)	1025	3,70	Northern Ireland (UK)	718	6,01
País Vasco (ES)	911	3,29	East Midlands (England) (UK)	628	5,26
Ciudad Autónoma De Ceuta (ES)	880	3,17	North East (England) (UK)	355	2,97
Región De Murcia (ES)	834	3,01	Gibraltar (UK)	11	0,09
Principado de Asturias (ES)	661	2,38			
Aragón (ES)	615	2,22			

Note: composed for[3]

[3] Smart Specialisation Platform. European Commission [online]. Retrieved from: https://s3platform.jrc.ec.europa.eu [accessed: May 27, 2020].