

TECHNICAL UNIVERSITY OF CLUJ-NAPOCA

ACTA TECHNICA NAPOCENSIS

Series: Applied Mathematics, Mechanics, and Engineering Vol. 67, Issue Special III, Jully, 2024

DIRECT FOREIGN INVESTMENTS AT EUROPEAN LEVEL. BIBLIOMETRIC AND COMPARATIVE ANALYSIS

Ionut Marius CROITORU, Cosmin Alexandru SPIRIDON, Florin Ionut BRATILOVEANU, Romanita JUMANCA

Abstract: Taking into consideration the current background and the challenges that the European economy is facing regarding the increasing levels of energy independence and climate neutrality achievement with the aim of increasing the well-being of the European population and implementing post-pandemic resilience programs, we believe that an important factor in achieving these goals is provided by direct foreign investments (DFI). For the economy to become efficient both at micro and macroeconomic levels, it is necessary to ensure its stability by attracting a large volume of DFI that will lead to sustainable economic growth, stabilization of inflation at several percentage points per year and the development and modernization of the real economy and public infrastructure. The research methodology implied the elaboration of a bibliometric analysis with a focus on a quantitative research method, in the form of an inventory of the previously published activity in the foreign direct investments field, elaborated by querying the database from the Web of Science platform. The query determined the display of a number of 101 scientific documents existing in the database, which contain the English phrase "foreign investments" in the title, abstract or keywords of the papers. The query was carried out on the 6th of July, 2023 and assumed the inclusion of publications from the past 6 years, 2017 – 2023, including articles published in EU countries and Great Britain. The results of the research confirm the moderate scientific interest in this field, showing that the data contained in the WOS have a Hirsch index of 15.

Key words: Foreign investments, quantitative research, Web of Science, VosViewer, bibliometric research.

1. INTRODUCTION

In Romania, foreign direct investments are made with the help of statistical research carried out by the National Bank of Romania. At the European level, the analysis of foreign direct investments is carried out due to various financial institutions that operate within the European economic space. As a result of the study carried out by Emerging Europe and the dates extracted from The UNTCAD for the period 2019-2022 we can see the level of direct investments within the European Union countries and the level of foreign direct investments per capita.

Analyzing the information in the Tables 1 and 2, we can see that in the years 2021 and 2022, Romania ranks second in terms of foreign direct investments in Eastern Europe with a value of 10,574 and 11,273 million dollars. But,

compared to Poland, which occupies the first place, the value of investments is approximately 2.6 times lower, this also being reflected in the level of the economy and in the well-being of the population.

Furthermore, if we look at the study on foreign direct investments per capita, we can observe that Romania occupies at the level of European Union the 17th place in 2022 with a value of 573 dollars/inhabitant, being below Poland which occupies the 14th place with a value of 739 dollars/inhabitant. If we look at the level of the country that are in the EU and are in the Eastern Europe Romania occupies the 10th place in 2022, being below Poland which occupies the 8th. Thus, we can see that the amount of DFI to be reflected at an appropriate level in the well-being of the population of the country where it is carried out must reach a

- 1080 -

higher level where the population is more numerous.

DFI in	2019	-2022	[million	of USD1	

	DFT in 2019 -2022 [million of USD]						
No	Country Name	2019	2020	2021	2022		
1	Sweden	8.761	21.514	21.133	45.963		
2	France	13.100	11.359	30.885	36.413		
3	Spain	17.842	17.948	21.957	34.811		
4	Poland	13.510	15.195	29.580	29.462		
5	Italy	18.146	-23.622	-8.956	19.947		
6	Romania	5.791	3.432	10.574	11.273		
7	Germany	52.684	56.204	46.468	11.053		
8	Czechia	10.108	9.411	9.051	9.853		
9	Finland	13.456	-1.579	13.806	9.445		
10	Portugal	12.251	7.683	9.615	9.099		
11	Hungary	4.256	7.047	7.559	8.571		
12	Greece	5.019	3.213	6.328	7.604		
13	Cyprus	52.330	-24.451	-35.744	4.913		
14	Denmark	27.029	1.685	4.681	4.494		
15	Malta	3.778	3.921	4.116	4.240		
16	Croatia	401	146	4.427	3.675		
17	Slovakia	2.511	-2.404	59	2.905		
18	Bulgaria	1.835	3.397	1.892	2.505		
19	Lithuania	3.022	3.518	2.865	2.158		
20	Austria	4.905	-9.351	13.494	1.947		
21	Slovenia	1.463	220	1.773	1.622		
22	Latvia	925	1.005	3.322	1.508		
23	Ireland	149.433	76.572	-4.930	1.490		
24	Estonia	3.083	3.419	-832	1.205		
25	Belgium	11.861	6.805	11.587	-1.710		
26	Netherlands	-1.140	-86.507	-77.453	-67.340		
27	Luxembourg	163.718	9.839	25.123	-322.054		

	Tabel 2
Distribution of DFI in 2019-2022	[per capita USD]

C-----

Table 1

No	Country Name	2019	2020	2021	2022
1	Malta	7.502	7.609	7.815	7.950
2	Cyprus	59.335	-27.411	-39.724	5.413
3	Sweden	853	2.075	2.019	4.357
4	Finland	2.437	-285	2.494	1.705
5	Czechia	959	894	861	939
6	Croatia	97	36	1.090	912
7	Estonia	2.323	2.572	-626	909
8	Portugal	1.191	746	934	886
9	Hungary	436	723	778	860
10	Latvia	482	530	1.773	815
11	Lithuania	1.061	1.248	1.028	785
12	Slovenia	692	104	837	765
13	Denmark	4.664	289	800	764
14	Poland	351	395	772	739
15	Greece	475	306	606	732
16	Spain	379	379	462	732
17	Romania	297	177	547	573
18	France	196	170	462	543
19	Slovakia	460	-440	11	515
20	Bulgaria	260	487	275	369
21	Italy	304	-397	-151	338
22	Ireland	30.521	15.481	-989	297
23	Austria	552	-1.050	1.512	218
24	Germany	634	674	557	133
25	Belgium	1.030	589	998	-147
26	Netherlands	-66	-4.962	-4.425	-3.834
27	Luxembourg	264.072	15.607	39.296	-497.304

In the Table 3, the level of DFI reported at the volume of the GDP in Romania is at 3,78% in 2022 and 4,28% in Poland. At European Union level Romania is on the 7th place and Poland on the 6th, and if we look at the countries that are in the Eastern Europe Romania occupies the 4th place and Poland the 3rd.

This value shows that the percentage of DFI in GDP is influenced by a series of factors like: the level of development of the economy, the attractiveness of the economy, the state policies and the regional political and security context.

The data extracted from the statistics of UNTCAD, the evolution of the GDP in the countries from EU in the period 2019-2022. The biggest economy from EU occupies the first five places, the 6th place it is occupied by Poland and Romania occupies the 12th place. If we look at the GDP of the Eastern Countries from EU, Poland occupies the first place and Romania the second place, it is the same ranking like at the DFI. So, GDP evolution it is from some points of view in relation with the volume of foreign direct investments, but the impasse is more visible in the countries from European Union with small and less developed economies than in the case of countries with large and developed economies.

- 1081 -	
----------	--

DFI percentage of GDP in 2019-2022, at EU level						
No	Country Name	2019	2020	2021	2022	
1	Malta	23,80	26,08	23,23	24,11	
2	Cyprus	201,69	-97,77	-125,82	17,33	
3	Sweden	1,64	3,93	3,32	7,80	
4	Croatia	0,64	0,25	6,42	5,21	
5	Hungary	2,60	4,48	4,16	5,14	
6	Poland	2,27	2,53	4,35	4,28	
7	Romania	2,31	1,37	3,72	3,78	
8	Portugal	5,11	3,35	3,79	3,61	
9	Latvia	2,69	2,90	8,34	3,56	
10	Greece	2,45	1,70	2,95	3,46	
11	Czechia	4,00	3,83	3,21	3,40	
12	Finland	5,01	-0,58	4,64	3,34	
13	Estonia	9,92	10,90	-2,24	3,10	
14	Lithuania	5,52	6,19	4,31	3,05	
15	Bulgaria	2,66	4,84	2,25	2,81	
16	Slovenia	2,69	0,41	2,87	2,60	
17	Slovakia	2,37	-2,25	0,05	2,56	
18	Spain	1,28	1,41	1,54	2,49	
19	France	0,48	0,43	1,04	1,30	
20	Denmark	7,80	0,47	1,18	1,15	
21	Italy	0,90	-1,25	-0,42	1,00	
22	Austria	1,10	-2,15	2,81	0,41	
23	Ireland	37,42	17,98	-0,98	0,29	
24	Germany	1,35	1,44	1,09	0,27	
25	Belgium	2,21	1,30	1,95	-0,30	
26	Netherlands	-0,13	-9,51	-7,65	-6,78	
27	Luxembourg	234,47	13,30	29,38	-387,07	

DFI are an important tool which is used for the development of the economy and therefore the identification of their determinants should be viewed with great care. The identification of new determinants must be looked at very carefully because they could be providing a competitive advantage in the economy. "In the present situation of the post-pandemic crisis ... DFI must become a concern due to the fact that these investments can be an important source of taxes and income for the local budget, an important source of jobs for the local community and also a relevant aspect that can mitigate migration" [1-5].

Evolution of CDD in 2010 2022 []

Table 3

	Evoluti	on of GDI	P in 2019-2	2022 [USD	Table 4]
No	Country Name	2019	2020	2021	2022
1	Germany	3.888.226	3.889.669	4.259.935	4.077.087
2	France	2.736.254	2.645.748	2.966.476	2.793.561
3	Italy	2.011.302	1.896.755	2.107.703	2.004.615
4	Spain	1.394.320	1.276.963	1.427.381	1.399.740
5	Netherlands	910.194	909.793	1.012.847	992.929
6	Poland	596.058	599.443	679.442	688.295
7	Sweden	533.880	547.054	635.664	589.409
8	Belgium	535.831	525.212	594.104	579.241
9	Ireland	399.322	425.852	504.183	511.365
10	Austria	444.621	435.225	480.368	469.950
11	Denmark	346.499	355.222	398.303	391.696
12	Romania	251.018	251.363	284.086	298.477
13	Czechia	252.548	245.975	281.778	289.969
14	Finland	268.515	271.892	297.302	282.829
15	Portugal	239.987	229.032	253.663	251.778
16	Greece	205.257	188.926	214.874	219.635
17	Hungary	163.989	157.182	181.848	166.661
18	Slovakia	105.720	106.697	116.527	113.472
19	Bulgaria	68.914	70.239	84.058	89.153
20	Luxembourg	69.826	73.993	85.506	83.204
21	Lithuania	54.752	56.847	66.445	70.751
22	Croatia	62.328	57.472	68.955	70.553
23	Slovenia	54.332	53.707	61.749	62.481
24	Latvia	34.344	34.602	39.854	42.337
25	Estonia	31.082	31.370	37.191	38.906
26	Cyprus	25.945	25.008	28.408	28.353
27	Malta	15.872	15.036	17.721	17.583

2. LITERATURE REVIEW

According to the OECD, DFI is "a category of investments that reflects the objective of establishing a long-term interest by an enterprise resident in an economy (direct investor) in an enterprise (direct investment enterprise), which is resident in an economy other than that of the direct investor. A long-term interest regards the existence of a long-term relationship between the direct investor and the direct investment undertaking and a significant degree of influence over the management of the undertaking. "The placement of capital and its materialization in industrial, transport, agricultural, construction companies, etc., provides foreign investors with the opportunity to make decisions and the right to control the project at the level of management, technology, marketing, etc." [5].

During the 20^{th} century, economists considered that the vector of performance, at the microeconomic level, and of growth and competitiveness at the macroeconomic level, is represented by investments in physical capital and infrastructure. The basic idea was that a country's growth rate depends on the investment-oriented share of GDP. The facts have shown that investments in physical capital are not sufficient to ensure economic progress and investments in "human capital" and "intellectual capital" are necessary to be made by increasing the level of education and continuous training, investments in scientific research, opening markets and achieving the global knowledge transfer system.

To capture the evolution of foreign direct investment we should highlight the motivational factors that can influence the volume of foreign direct investment in a country. In some countries, these factors represent significant economic benefits. Such nations have been able to make use of DFI and have significantly improved their living standards. Given the extensive risk systems, competitiveness for foreign investors is at the center of their attention. The foreign direct investment decision is a progressive one and the main interest is to invest in research [1].

A society based on cultural diversity must therefore invest primarily in education, health care and other programs of a social nature. The key principle that must govern in modern societies is based on investment policies, private or public, that should allow and favor a predicted investment in human, social and educational capital. Education and implicitly the investment in education must constitute key components to ensure a genuine long-term human development.

"Building an information society cannot be achieved without research and investment projects, both in the field of IT&C and in the field of education. The final target being competence, no technology, no theory, no approach will eliminate or neglect the teacherpupil/student relationship. All of them will be convenient and efficient tools at hand, both for the teacher and the student. Sometimes these tools can be unique to traditional education tools." [14].

The purpose of any investment, regardless of the profile of economic activity, is represented by the achievement of a secure long-term income, and the entrepreneur's objective is the recovery of the allocated financial resources and the appropriate remuneration of the shareholders in the form of dividends." At the time of globalization, the business environment of a country significantly affects the success of domestic businesses, respectively their products, on foreign markets. Also, the business conditions of a state influence its attractiveness for potential foreign investments" [4].

In the investment process, time management is very important, or how long it takes to recover the allocated financial resources in real terms. that is, considering the inflation rate. The ratio between the effort allocated to the realization of an investment process, i.e. the value of the allocated financial resources and the effect realized in revenue and profit, represents the economic efficiency of an enterprise. The field in which they are carried out is also important. "Entrepreneur-managers can identify several external factors with positive influences: increasing demand for their products in local markets; increasing demand for their products in foreign markets; infrastructure modernization; opportunities to finance their investments; simplified access to loans; attractive loan interest rates; better quality of raw materials; modern production methods and technologies; increasing the purchasing power of the population; positive changes in government rules and policies" [2].

The financial management of the company, another component in attracting foreign investments, must communicate by means of financial reports with outsiders and, depending on their expectations, "the strategy regarding the content of publishing the financial statements and making them available to the outside environment is established. Companies that fully understand the importance of quality financial reporting, including transparent ones, are also able to understand the needs of their investors and their business psychology. Here are the strategies developed when it comes to seeking resources for new investments: knowing what potential investors the company needs, they are given exactly the palette of information they want to have access to, ultimately leading to the achievement of the company's goals and strategy. If the potential investors did not have all the data and the reporting was opaque, nontransparent, the risk of the investment would increase, the end being the failure to complete the transaction and the failure to attract capital necessary for the development of the enterprise" [6] (supported also by [7,8]).

"The sustainability of investments is reflected more and more in different approaches and strategies of enterprises, especially in those enterprises located in the western countries of the European Union. It is not always easy to find agreement between definitions total of sustainability, but it is clear enough that it also includes the relationships between businesses with the natural environment, various social corporate governance. causes and The sustainability of enterprises generates a plus for the sustainability of the entire economic and social system. That is why all businesses must consider the economic, environmental and social impact. This means that businesses need to adapt their business models and decide to invest in actions that will benefit the environment and society, while ensuring long-term business sustainability" [3].

Investments, research and development can be seen as a stimulus - among the most important stimuli in economic activity. In an economic investments business. in research and development play the role of an impulse, a generator that gives birth, carries out and develops the activity." Advantages over competitors could be based either on differentiation (technological, qualitative, etc.) or on reduced costs. The most radical advantages, both differentiation and low cost, are usually obtained through investment in research development and and the implementation of the latest manufacturing technologies. As the cost of identified solutions decreases, the effects of these solutions on cost levels, as well as their sustainability and effectiveness, are normally lower" [13].

The number and size of companies that invest, produce and sell worldwide is in

continuous growth, giving rise to transnational business networks and market structures specific to global oligopolies.

Depending on the size of the activity, multinational corporations are, as a rule, very large, gigantic companies, but also smaller enterprises, but very important in a certain field of activity.

The capital of these companies is multi or plurinational; it consists mainly of direct foreign and portfolio investments, which also attract local capital from the countries where subsidiaries are created. Porter considered that the company is made up of a set of activities, some productive, which add value to production, and others complementary, which facilitate coordination [9].

Investments in computers and networks, as well as those in applications, generate certain advantages: they incorporate new assets into the company and influence the capacities and abilities of users, allowing the decentralization of decision-making capacity and ensuring greater autonomy for employees, they require management to assume compromises and position of the leader, determines the increase of cooperation opportunities between different stages which constitute the source of value creation. In order for investments in information technology to be fully effective, the essential parameters that define the structure of the company must be reconfigured, such as: human capital, work organization, relations with suppliers and customers.

3. RESEARCH METHODOLOGY

Taking into consideration the development of electronic databases regarding the preservation and archiving of scientific works, the facility for the access of a growing number of interested persons from several areas and fields of research to analyses, compare and interpret scientific research has become a normality. Thus, in the process of scientific research, new information, new points of view and new areas of research or reinterpretation are generated depending on the experiences and the degree of knowledge of the researched fields of the authors of scientific articles. - 1084 -

The investigation method for this research is based on the PRISMA Statements methodology which is structured in five steps [8]: (1) data search strategy; (2) collecting data by applying tags; (3) data filtering by applying Web of Science filters; (4) quantitative analysis carried out with the help of Word art and VosViewer programs; (5) data interpretation in the results and conclusions section. The bibliometric research was based on graphical representations and statistical data process to present the current state of foreign direct investment [10-12, 16].

The first query of the Web of Science database for the tag "foreign investments" articles. vielded 1295 Considering the presentation made in the previous chapters, a first filter was that the articles be Open access. Only 345 articles have this feature. We chose this filter because we wanted to have access to the content of all articles for free in order to be able to observe how investments are treated within the articles even if applying the filter may miss some important aspects of the topic covered. Analyzing the number of articles by year we noticed a significant increase from the year 2017. Also, even though we are in the middle of 2023, we decided to count this year as well because the articles published this year have novelty and have a large number of citations of articles published in previous years (123). Thus, the new filter applied was represented by the period 2017-2023 and resulted in a number of 267 articles. Considering that we want to analyze the financing of education at the level of the EU, we selected the EU countries and UK because it is no longer part of the EU as of January 31, 2020 and until that date it was part of the European strategies, and the economy from this country has strong ties with other economies in the EU states. After applying this filter, a number of 101 articles resulted. With this number of articles, bibliometric analysis was undertaken [15].

A first comparative analysis has been carried out starting from the word density through the word cloud, to see the association of words often used in association with "foreign investments", after the name of the articles, the abstract, author keywords and keywords plus.

 Table. 5

 Keywords and filters used when querying Web of

Filter applied	Item number in the selection
Keywords "foreign investments"	1295
Filters Open access	345
Filters Publication years 2017-2023	267
Filters EU countries and Great	101
Britain	

Table 6

Distribution of the 101 articles from WoS query,

Year	2023	2022	2021	2020	2019	2018	2017
Number articles	4	14	20	15	22	16	10

A second analysis has been carried out through the WOSviewer software, to identify the density of phrases or words used within those articles in the selection. I used filters cooccurrence, author keywords, fractional counting, minimum 2 occurrences.

Subsequently, the bibliometric analysis and the density analysis were addressed, which were carried out according to the year of publication, according to the country of publication and the number of articles per country, according to affiliation, according to the funding organization, according to the number of articles per author, and according to the number of citations of the scientific articles in the selection.

The Hirsch Index (h Index) for this selection is 15. In this part of establishing the methodology used, I considered it appropriate to present the criteria we approached in creating bibliographic links and the situation of funding and publication density.

Through the WOSviewer software, a map of the density of citations between authors was generated, using the data exported from the Web of Science database, and I selected the analysis type Bibliographic coupling and the analysis unit Authors and documents with at least 2 authors.

4. RESULTS

A first query of the Web of Science database for the tag "foreign investments", without filters, resulted in 1295 articles. As our intention is to analyze the articles in the work, the first filter was "open access" and 345 articles remained.

- 1085 -

Analyzing the annual density of article publications, we have decided to limit the research period between 2017-2023, and after this filter, 267 articles remained in the selection. The last filter applied to our selection is represented by EU countries and Great Britain, with a result of 101 items. I checked if there were bibliometric analyses in this selection, and the result was 0. Table 6 shows the distribution of the publication of articles for the selected period.

The first quantitative analysis of the sample of articles has been carried out through the word cloud of the words contained in the article title. author keywords, plus keywords and abstracts. The words with the highest frequency of use were: Invest, Foreign, Country, Develop, Economic, Firm, DFI, Direct, Policy, Region, Growth, Internal, Impact, Economy. From the analysis of the words, it appears that along with foreign investments, the articles in the selection frame have also dealt with the aspects of development, economic growth and the impact on the economy of the countries following foreign investments. In Figure 1 we represented the words with high frequency. The words with the highest frequency have the largest size, so the words Invest, Foreign, Country, Develop, Economic, Firm are the most visible in the graphic representation.



Fig. 1. Word cloud of the 101 articles retrieved from the Web of Science query.

The second analysis was that of phrase density, through the VOSviewer software. In Figure 2 we have represented the result after applying the co-occurrence filter, for all words.

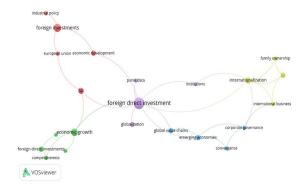


Fig. 2. Phrase and word density of the 101 articles in the WoS query.



Fig. 3 Authors' origins for the top 8 countries retrieved from the WoS query.

The words and phrases with the highest density resulting from the analysis through the VOSviewer software are DFI, economic growth, internationalization, China, DFI, emerging economies, emerging markets, Europe, corporate governance. Through bibliometric analysis and density analysis, in Figure 3 we have represented the first 8 countries regarding authors' origins in Europe. Continuing the analyses regarding the origin of the articles, in Table 7 we represented the affiliation of the authors of the articles.

It is observed that the first 6 results to which most authors of scientific articles are affiliated are from the sphere of the academic university environment, predominating universities in England. The N8 Research Partnership is a collaboration of 8 universities in the North of England. The White Rose University Consortium is a partnership between three universities in Yorkshire, England, consisting of the University of Leeds, the University of Sheffield and the University of York.

When analyzing the financiers of the 101 articles, only 57 articles had information about

their funding, and the hierarchy of the first 4 is represented in Table 8.

From this analysis regarding the source of funding, one can notice that the states that financed articles through various institutions are also the first in terms of the number of articles and authors.

By means of the, we have analyzed the links regarding the authors' citations within the selection of the 76 articles using the authors of the articles as the unit of analysis. The filters applied were a minimum of 2 articles per author and a minimum of one citation.

The level of links between the articles in the sample, for the first 5 articles, is presented in Table 9.

Tuble /	Table	7
---------	-------	---

Affiliation inferred from WoS query

Affiliations	Record
N8 Research Partnership	10
University of London	6
White Rose University Consortium	6
Loughborough University	3
University of Amsterdam	3
University of Sheffield	3

Table 8

To	p 4	funding	sources	from	the	WoS a	juery

Funding Agencies	Publications
Uk Research Innovation	4
Economic Social Research Council	3
European Research Council	3
Scientific Grants Agency of the Ministry	
of Education, Science, Research and	2
Sports of the Slovak Republic and the	2
Slovak Academy of Sciences (VEGA)	

T	1 1	0
Ta	nie	9

Top 5 authors by link level from the WoS query	Top:	5 aut	thors	bv	link	level	from	the	Wo	S o	uerv	
--	------	-------	-------	----	------	-------	------	-----	----	-----	------	--

No crt	Authors	Affiliation	Articles	Citations	Total link strengt h
1	Appiah - Kubi, Seth Nana Kwame	Czech University of Life Sciences Prague	2	4	15
2	Gebeltova Zdenka	Czech University of Life Sciences Prague	2	4	15
3	Maitah Mansoor	Czech University of Life Sciences Prague	2	4	15
4	Malec Karel	Czech University of Life Sciences Prague	2	4	15
5	Phiri Joseph	Czech University of Life Sciences Prague	2	4	15

It is noted that the first 5 authors in terms of number of citations are affiliated with the Czech University of Life Sciences Prague. Analysing the articles, it can be seen that these authors collaborated in writing the article "Impact of Tax Incentives on Foreign Direct Investment: Evidence from Africa" which has 4 citations and has the strongest links according to the VOSviewer program.

Figure 4 shows the links between the authors and most of the articles in our selection. This graph is made with the help of the VOSviewer software.

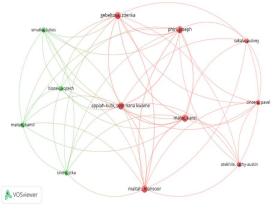
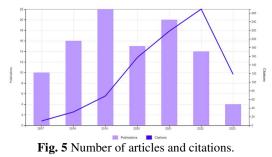


Fig. 4 Circular references on author citations obtained from the WoS query.

The 101 articles are cited 871 times, having a Hirsch Index (h Index) of 15. The citations for the first 4 articles are as follows. In Figure 5, the graph made by Web of Science is presented, where we have combined the number of articles and the number of citations.



From the analysis of the results regarding the number of articles per year, we cannot draw a conclusion regarding their writing trend, but we can see that from the point of view of citations, there is an increase in interest in citing the articles from our selection.

- 1086 -

5. CONCLUSIONS

DFI engine concerning are an the development and growth of the performance of an economy, the higher the level of investments, the more efficient and effective the economy of the country where they operate. Thus, the analysis of the flow of DFI has revealed the fact that in 2022 Romania attracted DFI worth 11.2 billion dollars, an increase compared to 2021 when the value of the investments attracted was 10.5 billion dollars and compared to 2018 when it attracted \$6.2 billion in funding. Poland in 2022 attracted foreign direct investment of 29.4 billion dollars, ranking first as in 2021 when it attracted a value of 29.6 billion dollars, increasing compared to 2018 when it attracted funding of 16 billion dollars.

DFI cannot be made within the economy of a country without the support of firms and companies operating in that country and without making direct investments there. The higher the volume of investments in a company, the more will the company be able to achieve a higher of research and development, degree performance technology. economic and effectiveness, and last but not least, it will generate added value in the economy in which it acts ultimately leading to an increase in the wellbeing of the population.

The data regarding DFI have been mainly obtained through direct statistical research carried out by the authors of the article by means of accessing the existing information at the level of the World Bank, the National Bank of Romania and the studies carried out by the Emerging Europe association.

To correctly evaluate the results of the bibliometric analysis in this article, its limitations must be mentioned. First, the analysis was performed using data from only one platform, Web of Science, therefore further studies should also address other databases such as Scopus or Dimensions. Second, even though this study had quantitative and qualitative assessments, after applying the filters we may miss important aspects because some scientific articles were excluded. The authors, wishing to have access to the content of all the articles in the selection, set the Open access filter, but thus 948 articles were excluded Thus bibliometric maps can be extended beyond the current study, to show networks of co-authors, co-words, correlations between groups of membership etc. The Open access filter could also be removed to perform a new analysis.

This paper is a preliminary study of a larger research, and the team that has written this article intends to deepen both the part concerning DFI and their role in increasing the well-being of the population at the level of the countries where they are made and as well as at the European and global level.

6. REFERENCES

- [1] Appiah-Kubi, S.N.K., Malec, K., Phiri, J., Maitah, M., Gebeltová, Z., Smutka, L., Blazek, V., Maitah, K. and Sirohi, J., 2021. Impact of tax incentives on foreign direct investment: Evidence from Africa. Sustainability, 13(15), p.8661
- [2] Bibu, N.A., Sala, D., Pantea, M. and Bizoi, G., 2008. Considerations about the Influence Factors on the Competitiveness of SME's from Western Region of Romania. Available at SSRN 1156397
- [3] Dumitriu, D., Militaru, G., Deselnicu, D.C., Niculescu, A. and Popescu, M.A.M., 2019.
 A perspective over modern SMEs: Managing brand equity, growth and sustainability through digital marketing tools and techniques. Sustainability, 11(7), p.2111
- [4] Fabuš, M., 2017. Current development of business environment in Slovakia and Czech Republic. Entrepreneurship and Sustainability Issues, 5(1), pp.127-137
- [5] Fraticiu, L., 2019. Considerations Regarding the Relevance of DFI in the Global Economy. Studies in Business and Economics, 14(1), pp.51-59
- [6] Glăvan, R.F. and Ștefea, P., 2019. Informational Limits of Financial Situations. Ovidius University Annals, Series Economic Sciences, 19(2).
- [7] Phiri, J., Malec, K., Sakala, A., Appiah-Kubi, S.N.K., Činčera, P., Maitah, M., Gebeltová, Z. and Otekhile, C.A., 2022. Services as a Determinant of Botswana's Economic Sustainability. International Journal of Environmental Research and Public Health, 19(22), p.15401

- 1088 -

- [8] Moher, D., Shamseer, L., Clarke, M., Ghersi, D., Liberati, A., Petticrew, M., Shekelle, P. and Stewart, L.A., 2015. Preferred reporting items for systematic review and meta-analysis protocols (PRISMA-P) 2015 statement. *Systematic reviews*, 4(1), pp.1-9.
- [9] Porter M., "*Competitive Advantage to Corporate Strategy*", Harvard Business Review, 1987, May-June., p. 5-16.
- [10] Radu, V., Radu, F., Tabirca, A. I., Saplacan, S. I., & Lile, R. (2021).
 Bibliometric Analysis of Fuzzy Logic Research in International Scientific Databases. *International Journal of Computers, Communications & Control, 16*(1).
- [11] Roman, M. and Strat, V.A., 2018. Romanian immigrants and the inflows of foreign direct investment towards Romania. Management & Marketing. Challenges for the Knowledge Society, 13(4), pp.1226-1241.
- [12] Spanache, I., Irimia, A. and Curaj, A., 2022. New approaches in research assessment-from bibliometrics to goals-

oriented approaches. The case of researchers' assessment for hiring and career development in Romania. *Europolity*, 16(2).

- [13] Stefea, P. and Pelin, A., 2015. On the Principles of Resource Consumption Optimization on Microeconomic Level. ENTRENOVA-ENTerprise REsearch InNOVAtion, 1(1), pp.376-382.
- [14] Vlada M., "Software educațional pentru informatică pe Web site-ul Universității din București", Conferința Națională de Învățământ Virtual, Universitatea din București, 2003, p. 169.
- [15] Web of Science Results analysis for 101 records from Web of Science Core Collection <u>https://www.webofscience.com/wos/woscc</u> /summary/0175f7b3-93c6-4266-a375cdd9dece582a-964c6377/relevance/1 (accessed la 06.07.2023)
- [16] Yang, S., Yuan, Q. and Dong, J., 2020. Are Scientometrics, informetrics, and bibliometrics different?. Data Science and Informetrics, 1(01), p.50

Investițiile străine directe la nivel european. Analiză bibliometrică și comparativă

Având în vedere realitățile actuale și provocările pe care economia europeană le parcurge privind creșterea nivelului de independență energetică și atingerea neutralității climatice cu scopul creșterii bunăstării populației europene și implementării programelor de reziliență postpandemică, considerăm că un factor important în realizarea acestor deziderate este oferit de investițiile străine directe. Pentru ca economia să devină performantă atât la nivel micro și macroeconomic este necesară asigurarea unei stabilități prin atragerea unui volum mare de investiții străine directe care vor duce la o creștere economică durabilă, la stabilizarea inflației la câteva procente pe an și la dezvoltarea și modernizarea economiei reale și a infrastructurii publice. Metodologia cercetării a presupus elaborarea unei analize bibliometrice, o metodă de cercetare cantitativă, sub forma unui inventar al activității de publicare în domeniul dezvoltării învățământului superior, fiind elaborată prin intermediul interogării bazei de date din platforma Web of Science. Interogarea a determinat afișarea unui număr de 101 de documente cu caracter științific existente în baza de date, ce conțin sintagma în limba engleză "foreign investments" în titlul, rezumatul sau în cuvintele cheie ale documentelor. Interogarea a fost efectuată la data de 6 iulie 2023 și a presupus includerea publicațiilor din ultimii 6 ani, 2017 – 2023, incluzând articolele publicate în țările UE și Marea Britanie. Rezultatele cercetării confirmă interesului științific moderat pentru acest domeniu, reieșind că datele cuprinse în WOS au indice Hirsch de 15.

- **Ionut Marius CROITORU,** As. PhD, Faculty of Entrepreneurship, Business Engineering and Management – FAIMA, University of Science and Technology POLITEHNICA Bucharest, Splaiul Independentei Str., Bucharest, Romania, <u>ionut.croitoru0208@upb.ro</u>
- **Cosmin Alexandru SPIRIDON**, Assoc. teaching, PhD, The Faculty of Economics and Business Administration, West University of Timisoara, 16 J.H. Pestalozzi Street, 300115, Timis, Romania, cosmin.spiridon@e-uvt.ro
- Florin Ionut BRATILOVEANU, PhD, Ministry of Education, The Intermediate Body for the Human Capital Operational Program (OI POCU), 78-80 Clucerului Str., 011368, Bucharest, Romania florin.bratiloveanu@oi.edu.ro
- **Romanita JUMANCA,** Assoc. Prof. PhD University of Medicine and Pharmacy Timisoara, 2 Piața Eftimie Murgu, 300041 Timisoara, Romania, <u>romanita.jumanca@umft.ro</u>