

Economic Growth, Economic Development, and Poverty: A Bibliometric Analysis

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Abstract: *The pertinacious problem of poverty in the world questions whether the existing mechanisms are effective in the poverty reduction process. Exploring this field has intensified since 1989, and this research provides an overview of the theoretical and empirical research that addresses economic development and poverty. Bibliometric analysis is performed, which includes names of the most common authors, journals, and countries of publications, as well as the frequency of words and expressions in the existing literature. Bibliometric units are researched from the Scopus database using keywords "economic development", "economic growth" and "poverty". The main contribution of this analysis is the review of existing literature addressing the key issues and identifying theoretical and empirical research in the field of economic development and poverty. This is the first study of its kind where scientific attention is being paid to economic growth, economic development, and poverty by the most influential journals and most prominent authors in economics.*

Keywords: *the economic theory, economic policy, poverty, keyword analysis*

JEL classification:
O10, I30, B26

Introduction

If we adopt the fact, that economic development must be directed towards improving the lives we live and freedoms we enjoy, and that hunger is not just a consequence of nature but also an economic and political disaster, we can conclude that all poverty-related factors interact with economic development as well. In strictly economic terms, “development has traditionally meant achieving sustained rates of growth of income per capita, to enable a nation to expand its output at a rate faster than the growth rate of its population. Levels and rates of growth of "real" per capita gross national income (GNI) (monetary growth of GNI per capita minus the rate of inflation) are then used to measure the overall economic well-being of a population—how much of real goods and services are available to an average citizen for consumption and investment” (Todaro & Smith, 2015, p.16). More recent views of economic thought emphasize that economic development includes structural and institutional changes and produces quantitative and qualitative changes in society, primarily focused on the reduction of poverty and inequality. Besides, „environmental constraints dictate a different type of economic development today, a development that brings about new economic structures and lifestyles that do less damage to the natural systems that sustain life on Earth“ (Van den Berg, 2017, p. 8).

On the other side, economic growth refers to an increase of quantitative indicators of an economy, increase in output per capita in a certain period. During the 1950s and 1960s, economic development was observed as a series of successive stages of economic growth, and "development became synonymous with rapid, aggregate economic growth" (Todaro & Smith, 2015, p.119). The subsequent development theories observed those phenomena separately, however, the authors decided to include both of these closely related phenomena in the analysis. Definitions and measures of poverty measured vary across the world. “The national poverty line for a country is typically a monetary threshold below which a person's minimum basic needs cannot be met, taking into account the country's economic and social circumstances” (World Bank, 2020a). According to a definition of relative poverty, “a person or a household is considered to be poor when their income and resources are worse than what is thought to be adequate or socially acceptable in the society in which they live” (Council of Europe, 2020). Therefore, someone can be poor in a relative meaning, even if they are not poor in the absolute sense. Developing countries usually use absolute lines but “most developed countries use relative poverty lines” (Ravallion & Chen, 2011, p. 1251). In Europe, poverty is a synonym with relative poverty. Except for low income per capita, measured by the purchasing power parity, a poor world is characterized by inadequate nutrition, poor health (high prevalence of infectious diseases), high mortality rates - especially in young people, poor living conditions, low educational attainment, poor or absence of involvement in political and social programs, frequent social unrest and wars, existence in ecologically polluted areas, and so on. When “10 percent of the world’s population (736 million people) lived on less than US\$1.90 a day in 2015” (World Bank, 2020b), exploring these topics is more than necessary.

To achieve the research aim, we defined the following research questions: Who are the most prominent authors in the field of economic growth, development, and poverty? What are the most frequently cited articles? What are the leading scientific journals? Which countries and authorships contribute the most to economic growth, development, and poverty? What are the most used keywords in this area?

The results of this study provide useful information in the field of research economic development and poverty. The research is structured as follows: the second part gives theoretical background and presentation of previous research. Part three outlines’ data and methodology, while the fourth part provides analysis and discussion of the empirical results and in the end conclusions and research opportunities.

Theoretical background and literature review

Poverty issues are now in the focus of development economics, and they are one of the most controversial topics of economic analysts and historians. Economic development directions evolved and a lot of theories, strategies, and politics, which seek to reduce poverty in the world, have been developed. It has been commonly held that economic growth does not necessarily lead to poverty or income inequality reduction,

and that support programs and financial and social assistance to the poor are the keys. Approaches to the link between economic growth and poverty changed over time. From the 1950s to early 1970s, theories like Kuznets inverted U, Rostow's stages of economic growth, Nurkse's vicious circle of poverty, were prevalent in the field of economic growth and development. However, the increase in poverty and inequality, during the 1980s and 1990s, led to a conclusion that it is not possible to consider growth separate from poverty. New theories since the 1990s emphasize the inextricable link between economic growth, economic development, and poverty: (Adams, 2003; Fields, 1989; Kwon & Yi, 2015; Lopez, 2006; Ravallion & Chen, 1999; Roemer & Gugerty, 1997; Škare & Družeta, 2016), and so on.

The nexus between economic growth and poverty varies among different authors, countries, and periods. According to DFID “economic growth is the most powerful instrument for poverty reduction and improving quality of life in developing countries. Strong growth and employment opportunities encourage parents to invest in the education of their children” (DFID, G. B., 2008, p. 2). It can lead to the emergence of strong and growing groups of entrepreneurs who would then increase pressure on governments for better management. Islam (2004) conceptualized a virtuous circle of links between growth, employment, and poverty reduction from which economic growth leads to productive capacity, productive capacity then leads to employment with rising productivity, which leads to higher income of poor, where the higher income of poor leads to higher expenditure on health, education and skills development, which in the end, increases productive capacity (Islam, 2004). Economic growth and development result in creating new jobs, driving human development, and improving health and education, which ultimately have effects on the quality of life of all people in society. Creating new jobs gives society better employment opportunities, which directly correlates with poverty reduction because people become a part of the working population that can afford at least a minimum of goods and thus rise above poverty. Increasing wages contributes to poverty reduction too, as it increases the solvency of the population and the ability to provide better living conditions for the same level of work.

Some recent bibliometric analyses focus on the top economic journals, main topics, top publishing, and most cited authors and institutions. Lahat (2017) emphasizes that scientific findings of poverty are one of the main factors that influence policymakers' perceptions on how to deal with this problem. Knowledge of the phenomenon of poverty is very important, often more notable for observation than exposure to it. (Lahat, 2017).

Teixeira and Carvalho (2014) used bibliometric analysis and managed to measure the number of attention authors paid to poverty and poor countries. They identified and analyzed papers published in the most prominent journals in the area of international economics between 1971 and 2010. They concluded that 'Poverty authors pay little attention to this matter, “representing only 0.6% of all articles, which corresponds to the absolute value of 13 in a total of 1,740 articles” (Teixeira & Carvalho, 2014, p. 22).

Cardoso and Teixeira (2020) conducted the bibliometric analysis with a focus on poverty in the most influential journals in economics and highlighted two main findings:

- (i) the scientific attention paid to poverty in the Blue-Ribbon journals (top American economic journals) is relatively deficient, but with a positive trend, “increasing from a modest 0.36 percent of total articles published in the 1970s to 1.92 percent of total publications in 2010s”; and
- (ii) “relative weight of specific poverty subtopics has significantly changed over the last 50 years, shifting from a focus on defining and measuring poverty, to policy-related issues in the most recent period (2000 onward)” (Cardoso & Teixeira, 2020, p. 1).

Ravallion (2011) used Google Books Ngram Viewer to analyze the evolution of attention to poverty and related topics in the literature. He documented the number of times the word ‘poverty’ appears in books and one of the conclusions is that there have been “significant changes in attitudes about poverty over the last three centuries and even contempt for poor people, to the view that society, the economy, and government should be judged in part, at least by their success in reducing poverty” (Ravallion, 2011, p. 43). This research provides a content analysis of poverty-related keywords and poverty subtopics addressed in the relevant literature. There are not many papers dealing with bibliometric analysis in the field of economic development and poverty and this research is the first or one of the first ones in this area.

Methodology

Bibliometric analysis

The bibliometric analysis employs quantitative methods to investigate the scientific activity within a specific field and is entirely dependent on available written publications that have been preserved and stored in a bibliographic database. Bibliometric techniques have evolved, and two of them stand out: performance analysis and science mapping. Performance analysis focuses on measuring publication, impact (often used as a proxy for quality) for authors, journals, institutions, countries, and keywords, while science mapping is intended to explore into dynamics of a research field over a particular period.

Choice of database

This research used the SCOPUS databases to retrieve publications from 1970 to 2019. Since all the main journals and conferences, covering economic issues, are included in the SCOPUS database, and bibliometric analysis was conducted using studies published in Scopus up until May 2020. Scopus was chosen because it includes more than 22000 titles, from more than 5000 international publishers, containing different types of documents, along with other relevant metadata that is relevant and important to this research (Aghaei Chadegani, A. et al., 2013).

We searched for publications related to economic development and poverty of all types, by their titles, abstracts, and keywords. The search query string was designed to cover as many results as possible that met our requirements as described below. Keywords included in the search were 'Poverty' AND ('Economic development' OR 'Economic growth') utilizing the Boolean operator 'or' in the title, abstract, and keyword field. Moreover, since our focus was on economics, we chose, as an additional filter, AND/NOT (disease OR health OR cancer OR infections OR Terrorism OR flood OR Agriculture OR mortality OR violence OR biodiversity OR Ecosystem OR Forest OR Urbanism OR nutrition). We limited literature to the subject areas of "Social Sciences", "Economics, Economics, and Finance" and "Business, Management, and Accounting." The survey was conducted during the last week of May of 2020, and a total of 4415 publications were returned from the main search. The validity of the search strategy was tested by manually reviewing the retrieved articles.

Table 1: The query and additional search options are used during the search

Search query	Additional search options
<p><i>(Poverty) AND ("Economic development" OR "Economic growth")</i> AND NOT (disease OR health OR cancer OR infections OR Terrorism OR flood OR Agriculture OR mortality OR violence OR biodiversity OR Ecosystem OR Forest OR Urbanism OR nutrition) AND EXCLUDE (PUBYEAR, 2020) AND (LIMIT-TO (SUBJAREA, "SOCI") OR LIMIT-TO (SUBJAREA, "ECON") OR LIMIT-TO (SUBJAREA , "BUSI")) Refined by: Databases: (Scopus) <i>Timespan= 1970 -2019</i> <i>Search language=Auto</i></p>	<p>Advanced search: Date: 27. August 2020 Use field: TITLE-ABS-KEY</p>

Source: Authors' work

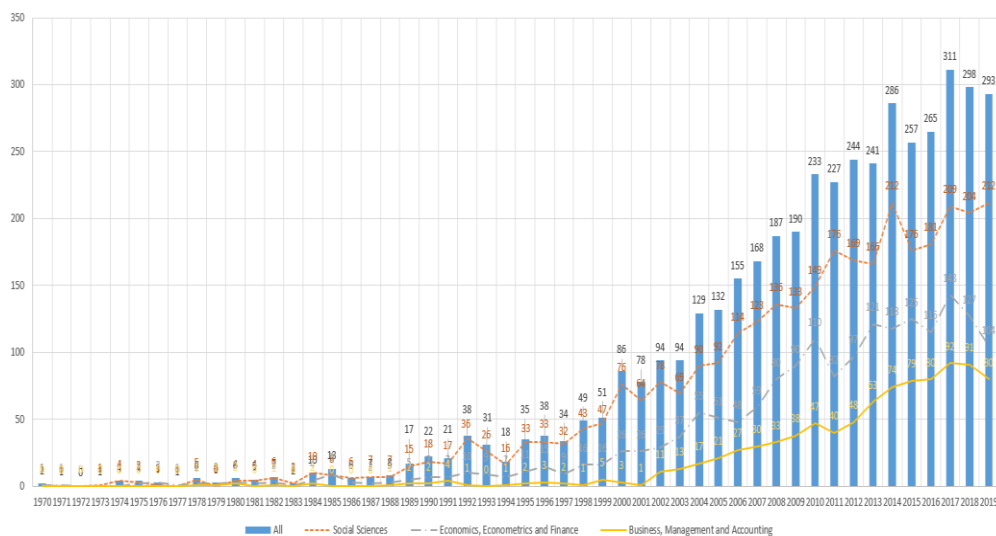
Results and discussion

Our research shows that topics related to poverty and economic growth and development have drawn significant attention from scientists in the last few decades. Another research similarly presented and concluded that understanding the importance top economics journals give to poverty is relevant mainly because of the impact these scientific sources have on policymakers (Cardoso and Teixeira, 2020, p. 13).

Results of the activity indicators

Based on the search criteria previously defined in Table 1, Figure 1 shows the number of publications published over time, in terms of compatibility with the time frame of those collected publications. Besides an overall number of published publications, numerous publications can be also seen in the following domains: "Social Sciences", "Economics, Econometrics and Finance" and "Business, Management, and Accounting." It is essential to mention that the publication may be included in several categories (subject areas) according to SCOPUS rules.

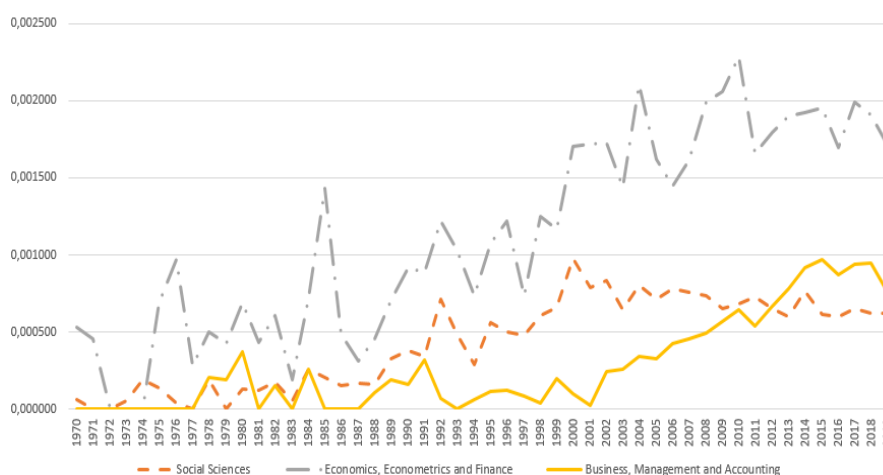
Figure 1. Number of publications relevant to Economic Growth, Economic Development, and Poverty by year of publication



Source: Authors' research from the SCOPUS database

Regarding the number of publications per year, Figure 1 depicts the growing pattern of Poverty and Economic Growth and Development in the last forty years. To present the importance of the subject for literature, Appendix 1 shows the total number of publications and related topics published in Scopus in the subject areas 'Social Sciences', 'Economics, Econometrics and Finance' and 'Business, Management, and Accounting'. Data shows that the total number of publications in the area of "Social Sciences" increased from 15,109 in 1970 to 338,553 in 2019, while the number of topic publications increased from 1 to 212 in the observed period. When it comes to the subject area "Business, Management, and Accounting" the total number of publications increased from 2,359 in 1970 to 106,419 in 2019, while the number of topic publications increased from 0 to 80. In the subject area "Economics, Econometrics, and Finance", the total number of publications increased from 1,869 in 1970 to 60,999 in 2019, while the number of topic publications increased from 1 to 104. The absolute number of publications published during the observation period is shown in Figure 2.

Figure 2. Publications related to Poverty and Economic Growth and Development by year of publication, relative terms (topic related publication vs total number of publications)



Source: Authors' research from the SCOPUS database

Although, in an absolute sense, the largest increase occurred in the field of Social Sciences, while in relative terms (topic-related publications vs a total number of publications) the largest increase occurred in the field of "Economics, Econometrics, and Finance", where the notable increase occurred in the period from 1983 to 1986. However, the largest increase in this field occurred from 2003 to 2011, whereupon the number of topic-related publications vs the total number of publications began to decline.

Since 1989, the highest number of publications per year is concentrated, which can be attributed to the World Bank, which has had a critical role in research on important issues. "Research on income distribution that has emerged over the years has sought to increase the understanding of donors, policymakers, and academics on the important questions of who benefits from economic development, who is hurt by economic decline, and why" (Fields, G. S., 1989, p. 2). Another reason for this is the progressive economic development in markets other than the US, especially in those of Europe and China. Table 2 shows the top authors based on the number of publications and citations per article.

Table 2. Most prominent authors who have published over 10 publications on Poverty and Economic Growth and Development (Accessed 03/02/2020, Revised 27/08/2020)

Authors	Affiliation	Number of publications	Number of Citations	Citations per article
Martin Ravallion	Georgetown University	21	1946	92.67
Nanak C. Kakwani	University of New South Wales UNSW Australia	13	539	41.46
Ernesto M. Pernia	University of the Philippines Diliman	13	384	29.54
Arsenio M. Balisacan	University of the Philippines Diliman	12	182	15.17
Andy Sumner	King's College London	12	103	8.58
Gary S. Fields	IZA	10	155	15.50

Source: Authors' research from the SCOPUS database

Martin Ravallion is the most prolific author with 21 publications, followed by Nanak C. Kakwani and Ernesto M. Pernia with 12 and Arsenio M. Balisacan and Andy Sumner with 12 publications. Looking at the number of citations per publication, the first three authors are Martin Ravallion with 92.67, followed by Nanak Kakwani with 41.46, and Ernesto M. Pernia with 29.57. Martin Ravallion is the most prominent author, however, his article titled "Growth, inequality, and poverty: Looking beyond averages" (2001) is one of the ten most frequently cited articles. Table 3 includes the 10 most cited publications based on the SCOPUS database.

The most cited article (Table 3) is “A new data set measuring income inequality” (1996) by K. Deininger and L. Squire, published in *the World Bank Economic Review* with 1279 citations. This paper on the new data set explores the systematic nexus between growth and changes in aggregate inequality. They used the Gini coefficient for measuring changes in inequality and concluded that “there is a strong positive relationship between growth and poverty reduction and no systematic relationship between the growth of aggregate income and changes in inequality as measured”. (Deininger & Squire, 1996, p. 565).

Table 3. Ten of the most frequently cited articles according to the SCOPUS database, from the analyzed set of publications (Accessed 3/2/2020, Revised 27/08/2020)

Citations	Author	Title	Year	Journal
1291	(Deininger, K. & Squire, L., 1996)	A new data set measuring income inequality	1996	World Bank Economic Review
1277	(Glaser, E. L., La Porta, R., Lopez-de-Silanes, F., & Shleifer, A., 2004)	Do institutions cause growth?	2004	Journal of Economic Growth
990	(Dollar, D. & Kraay, A., 2002)	Growth is good for the poor	2002	Journal of Economic Growth
765	(Diener, E. & Biswas-Diener, R., 2002)	Will money increase subjective well-being? A literature review and guide to needed research	2002	Social Indicators Research
535	(Dollar, D. & Kraay, A., 2004)	Trade, growth, and poverty	2004	The Economic Journal
508	(Rodrik, D., 2008)	One economics, many recipes: globalization, institutions, and economic growth (Book)	2008	Princeton University Press
496	(Beck, T., Demirgüç-Kunt, A., & Levine, R., 2007)	Finance, inequality, and the poor	2007	Journal of Economic Growth
471	(Beckerman, W., 1992)	Economic growth and the environment: Whose growth? Whose environment?	1992	World Development
462	(Taylor, E. J., 1999)	The new economics of labor migration and the role of remittances in the migration process	1999	International Migration
436	(Ravallion, M., 2001)	Growth, inequality, and poverty: Looking beyond averages	2001	World Development

The second most cited article is “Do institutions cause growth?” (2004) by E.L. Glaeser, R. La Porta, F. Lopez-de-Silanes, while A. Shleifer was published in the *Journal of Economic Growth* with 1253 citations. This paper revisits the debate whether political institutions cause economic growth or, instead, whether the development and build-up of human capital accumulation lead to institutional improvement. They concluded that the evidence is non-existent, institutions cause economic growth, as opposed to growth improving institutions. Their analysis for the period from 1960 to 2000 provides no support for the claim that “institutions cause growth”. Substantial evidence points to the primacy of human capital for both growth and democratization. Also, they showed that institutional results improve as the country becomes richer (Glaeser, et al., 2004).

The article “Growth is good for the poor” (2002) by D. Dollar, and A. Kraay was published in the *Journal of Economic Growth* with 960 citations. This paper underscores the importance of economic growth in reducing poverty and concludes that when average incomes rise, the average incomes of the poorest fifth of society rise proportionately. They emphasize that growth is not all that is necessary to advance the lives of the poor, and that good poverty reduction strategies must include tools of good rule of law, openness to international trade, good fiscal policy and discipline, and so on (Dollar & Kraay, 2002).

“Will money increase subjective well-being? A literature review and guide to needed research” (2002) by Diener and Biswas-Diener were published in *Social Indicators Research* with 741 citations. They opened the question of whether the money will make people happy and concluded that a higher income might help if one is very poor. More money increases subjective well-being, “when it means avoiding poverty and living in a developed nation, however, income appears to increase subjective well-being little over the long-term, when more of it is gained by well-off individuals whose material desires rise with their incomes”. The fundamental finding is “that for middle and upper-income people in developed countries, where gaining more income is not likely to enhance their subjective well-being” (Diener & Biswas-Diener, 2002, p. 119).

The fifth most cited article is “Trade, growth, and poverty” (2004) by Dollar and Kraay, published in *The Economic Journal*. In this paper, the authors investigated how globalization and trade openness affect economic growth and poverty. They emphasize that economic growth leads to proportionate increases in incomes of the poor. “The evidence from individual cases and cross-country analysis supports the view that globalization leads to faster growth and poverty reduction in poor countries. Furthermore, there is no systematic relationship between changes in trade volumes and changes in household income inequality” (Dollar & Kraay, 2002, p. 22).

Table 4. The seventeen most influential and productive journals according to Scopus (Accessed 3/2/2020, Revised 27/05/2020)

Journals	Citations	(%) of citations	Publications	(%) of publications	Average citations per publication
World Development	4783	7.75%	99	2.24%	48.31
Social Indicators Research	1035	1.68%	20	0.45%	51.75
Journal Of Development Studies	936	1.52%	25	0.57%	37.44
Journal Of International Development	861	1.40%	56	1.27%	15.38
Development Policy Review	581	0.94%	25	0.57%	23.24
Asian Development Review	498	0.81%	23	0.52%	21.65
Journal Of African Economies	300	0.49%	29	0.66%	10.34
Bulletin Of Indonesian Economic Studies	271	0.44%	21	0.48%	12.90
Economic Development Quarterly	233	0.38%	23	0.52%	10.13
International Journal Of Social Economics	228	0.37%	35	0.79%	6.51

Development Southern Africa	214	0.35%	23	0.52%	9.30
Sustainability Switzerland	203	0.33%	30	0.68%	6.77
Finance And Development	199	0.32%	20	0.45%	9.95
African Development Review	188	0.30%	20	0.45%	9.40
IDS Bulletin	182	0.29%	26	0.59%	7.00
Pakistan Development Review	142	0.23%	36	0.82%	3.94
Mediterranean Journal Of Social Sciences	117	0.19%	40	0.91%	2.93

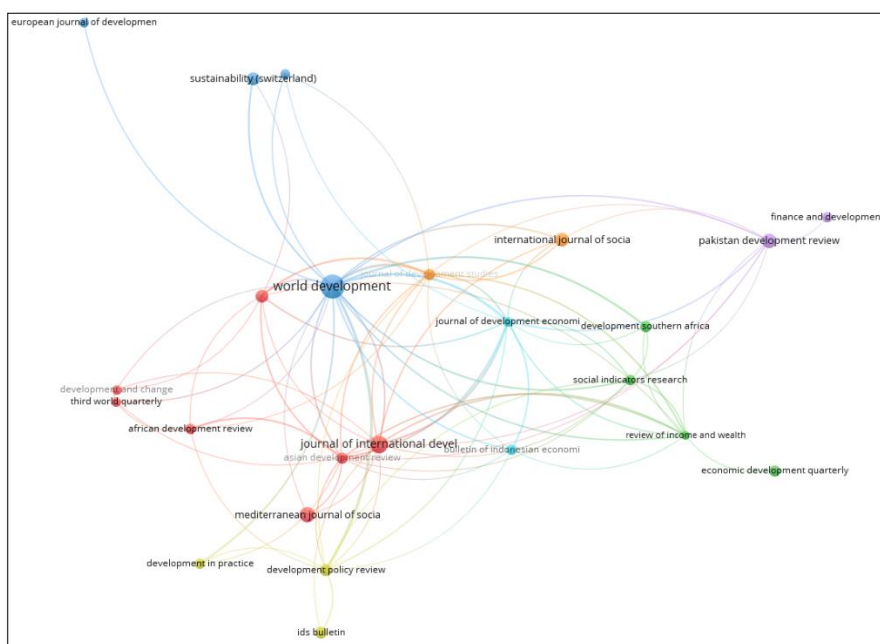
Table 4. (continued)

The 17 most influential and productive journals, on topics including economic growth, economic development, and poverty, are identified and presented in Table 4. To measure the impact of each journal, the indicators are based on the number of citations of all published publications. Data presented in Table 4 identifies the most influential and productive journals on Economic Growth, Economic Development, and Poverty topic, based on the number of times all papers published by the journal are cited in other papers to measure the influence of each journal.

Data reveals that the World Development journal has the highest number of citations (4783, 7.75%) and articles (99, 2.24%), followed by Social Indicator Research (1035, 1.68%), Journal of Development Studies (936, 1.52%), Journal of International Development (861, 1.40%), Development Policy Review (581, 0.94%), Asian Development Review (498, 0.81%), Journal of African Economies (300, 0.49%), and so on. World Development is the multi-disciplinary international journal devoted to the Study and Promotion of World Development. When it comes to the average number of citations per publication, Social Indicators Research journal is in front of the World Development journal with an average of 51.75 citations per publication.

Figure 2 shows the citation network map of journals that classifies them into clusters based on citations among them. The weight of each node is represented by the size of nodes and words. The nodes of the same color belong to a cluster, while the distance between two nodes captures the strength of their relationship; shorter distance imports a stronger connection.

Figure 3. Citation journal map, generated with VOS Viewer



Consistent with the results shown in Figure 3, *World Development* and *Journal of International Development* journals have the highest node size. A total of seven clusters are identified by the VOS Viewer. The first one is formed by the *World Development*, *European Journal of Development Research*, *Review of Development Economics and Sustainability (Switzerland)*. Cluster 2 includes *African Development Review*, *Asian Development Review*, *Development, and Change*, *Journal of African Economies*, *Journal of International Development*, *Mediterranean Journal of Social Sciences*, and *Third World Quarterly*. Cluster 3 is formed by the journal of *Development Southern Africa*, *Economic Development Quarterly*, *Review of Income and Wealth* and *Social Indicators Research*.

Cluster 4 includes *Development in Practice*, *Development Policy Review*, and *IDS Bulletin*. Cluster 5 includes *Finance and development* and *Pakistan Development Review*. Cluster 6 is formed by the *Bulletin of Indonesian Economic Studies* and *Journal of Development Economics*. Finally, Cluster 7 is composed of the *International Journal of Social Economics* and *Journal of Development Studies*.

Table 5 shows the 15 most influential countries based on the representation of defined countries/territories associated with the main search records identified in Scopus. With slightly less than one-fourth of the records found in this field, the United States of America dominates with 1131 publications. The United Kingdom, with approximately 11% of all identified publications, also has a major impact on this research area. India is a recent surprise. Thanks to the structural and political reforms and development of technological innovation, India's GDP growth has been among the highest in the world in the past decade, achieving an "annual growth of between 6-7%" (Myers, J., 2020) which can be correlated to broader research in the field of economic development and poverty. No wonder the fact that the United States of America, the United Kingdom, and Australia are ranked first, due to their ranking according to the QS Higher Education System Strength Rankings 2018. The United States of America takes the first position in the world and is followed by the United Kingdom in second place. Australia takes the third position (QS Higher Education System Strength Rankings, 2020). India is a surprise and it is in the 26th position, while South Africa is in the 33rd position, and two of those countries are one of the first five countries among the most productive according to our bibliometric analyses. When it comes to government expenditure on education (% of GDP), South Africa (2018) allocates 6.2% of its GDP on education, Australia (2016) 5.3%, the United States of America (2014) 5.0%, United Kingdom (2016) 5.5%, India (2013) 3.8%, and so on (World Bank, 2020).

Table 5. Fifteen of the most productive countries/territories according to Scopus (Accessed 3/2/2020, Revised 27/05/2020)

	Country	Number of publications (%)	Number of citations for publications	Average citation per publications	Year of a first published article	Year of Last published article
1	The United States of America	1131 (23.46)	25367	22.43	1964	2019
2	United Kingdom	534 (11.08)	9640	18.05	1985	2019
3	South Africa	300 (6.22)	2326	7.75	1980	2019
4	India	220 (4.56)	1110	5.05	1978	2019
5	Australia	205 (4.25)	2168	10.58	1982	2019
6	China	145 (3.01)	1255	8.66	1998	2019
7	Germany	141 (2.92)	1000	7.09	1990	2019
8	Canada	135 (2.80)	1889	13.99	1975	2019
9	Netherlands	101 (2.10)	1146	11.35	1984	2019
10	France	97 (2.01)	754	7.77	1970	2019
11	Malaysia	78 (1.62)	579	7.42	1999	2019

12	Italy	69 (1.43)	654	9.48	1978	2019
13	Japan	67 (1.39)	516	7.70	1995	2019
14	Spain	66 (1.37)	443	6.71	2000	2019
15	Indonesia	65 (1.35)	284	4.37	1996	2019

Table 5. (Cont'd)

The majority, six of these fifteen most productive countries/territories are in Europe, while five are in Asia, two are in North America and one is in Oceania and Africa, which means that this is a topic of interest in many regions around the world. The United States of America had the largest number of total citations with 25,367, followed by the United Kingdom with 9,640, and South Africa with 2,326. Considering the average citations per article, the United States of America is top-ranked again with 22.43, followed by the United Kingdom with 18.05, and Canada with 13.99. By contrast, Indonesia (4.37), India (5.05), and Spain (6.71) had the lowest number of citations relative to the number of published articles. Finally, Table 4 shows the first year and the last year these countries published at least one publication in the field of poverty and economic development. Countries such as the United States of America, France, and Canada have had publications since the beginning of the study period, while the other countries began publishing between 1978 and 2000. In 2019, all these countries continue to regularly publish work on this topic.

Keywords analysis (co-occurrence)

Keywords are a significant part of a publication and represent the core content; specific associations formed between keywords will identify the degree of the academic level of interest in the field through keyword analysis. In this research, the authors use keyword co-occurrence analysis to address highly popular topics in the field of poverty and economic development. A total of 4372 publications had 7997 keywords, most of which are not frequently used, with a small number of keywords that are often used. Surely, the most frequently used keyword is 'poverty' with the highest frequency of occurrence, followed by 'economic growth', 'economic development', 'poverty alleviation', 'economics', 'sustainable development', 'developing countries, and 'income distribution'. Twenty-five keywords with an appearance of more than 20 times are shown in Table 6.

Table 6. Most important keyword(s)

Keyword	F	Keyword	F
1. Poverty	1093	14. Development	149
2. Economic growth	1082	15. Economics	138
3. Economic development	865	16. Sub-Saharan Africa	126
4. Poverty alleviation	652	17. Growth	123
5. Income distribution	251	18. South Africa	123
6. Africa	210	19. Employment	122
7. Inequality	207	20. Globalization	120
8. Developing world	193	21. Developing countries	117
9. Sustainable development	190	22. Poverty reduction	116
10. Asia	188	23. Social policy	104
11. India	161	24. Developing country	97
12. China	156	25. Economic policy	90

13. Eurasia	151		
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Table 6. (Cont'd)

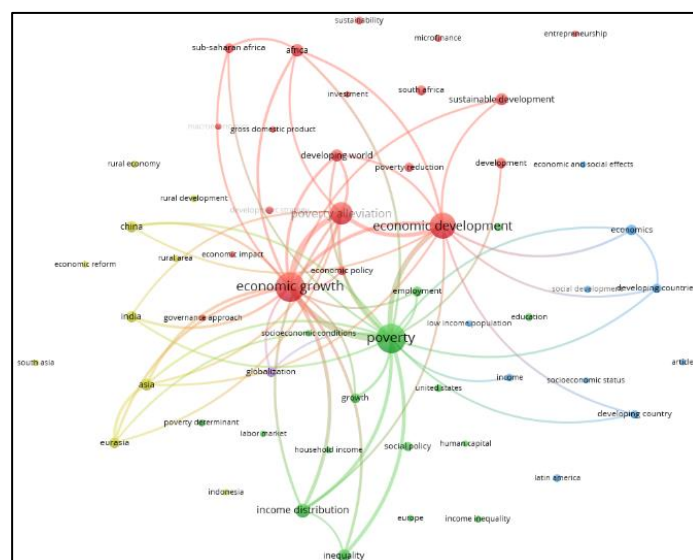
It was expected that keywords such as 'poverty', 'economic growth', 'economic development', 'poverty alleviation', 'income distribution' are those that are first ranked. Africa and Sub-Saharan Africa are regions with the highest poverty rates in the world and they are very often mentioned and analyzed in papers and publications. Other keywords are closely related to the phenomenon of poverty and economic growth. China is one of the most productive countries, and it has generated about 3 percent of all publications on economic growth, economic development, and poverty. According to Table 6, the word "China" is one of the important keywords. This is not surprising, since China has recently been characterized as the new center of gravity of the global economy. Today, China is a global economic superpower, a locomotive of global economic growth, a country with the second economic power and the second place in world exports, a country with the largest foreign trade surplus and the largest foreign exchange reserves, and a country whose economic growth has been the highest in the world for decades.

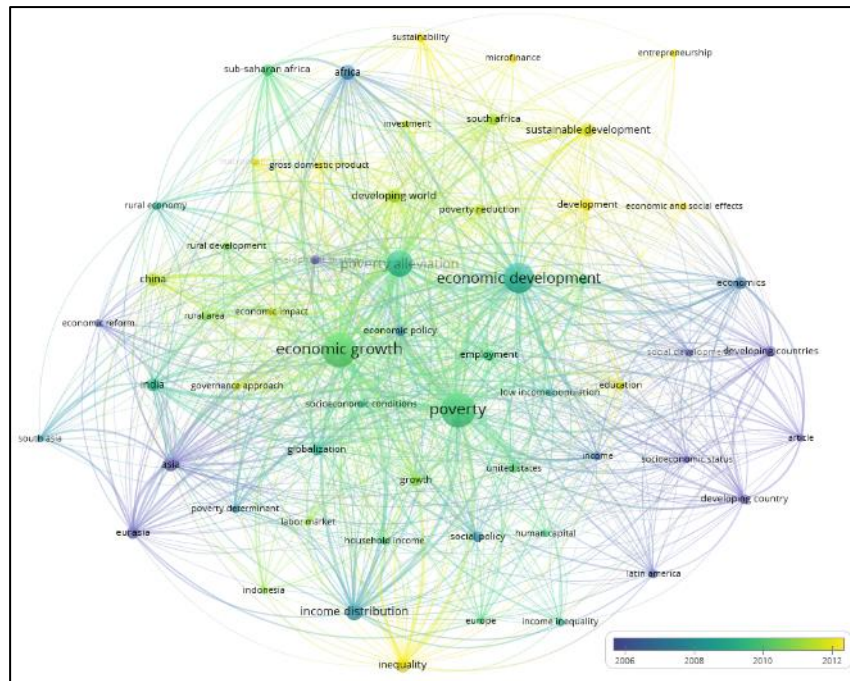
Following the preliminary consolidation of keywords, the co-occurrence network was employed to identify and represent identifiable networks of high-frequency co-keywords in the field of poverty and economic development. Using natural language processing techniques, keywords from analyzed publications are used to determine the frequency of given words ('co-words') that appear in these publications. The VOS Viewer was used to analyze keyword co-occurrence and it obtained graphs that explore the most common themes illustrating the research trends and hotspots in the field of economic growth, economic development, and poverty (Van Eck, N. J. & Waltman, L., 2011). The co-occurrence threshold of the keywords was set, as 50 and 57 items were incorporated into visualization (see Figure 4).

In Figure 4a, the position of a keyword in the two-dimensional space is determined by applying WOS mapping techniques in 2D (Van Eck, Waltman, Dekker, & van den Berg, 2010) space for each term, and the size of the circles represents keyword occurrences. The larger the circle, the more often a keyword has been co-selected. Keywords such as 'economic development', 'poverty', 'economic growth' and 'poverty alleviation' had the highest strength. Line thickness is a measure of the strength of the association between keywords relative to each other. The distance between two keywords implies the relative strength of their relationship and the similarity of the topic. The distance between two keywords shows the relative strength of their relatedness and topic similarity. The same color circles suggest a cluster of many interlinked keywords and underline an individual aspect or subtopic within the same high-level science field. The co-occurrences network of keywords in Figure 4a clearly illustrates four distinct clusters.

Figure 4. Co-occurrences network of keywords, generated with the VOS Viewer (a – network visualization based on co-occurrences keywords; b – network visualization based on the co-occurrences keywords and average publication per year scores)

a)





b)

By analyzing the key node circles, appropriate labels of the four main clusters could be assigned to each of them. Specifically, as was shown in the red cluster (Figure 4a, cluster 1, 20 items), keywords such as economic growth, economic development, poverty alleviation, Africa, developing world, sustainable development, development, poverty reduction, and such, apparently were relevant to the topic of “economic development”. In the green cluster (Figure 4a, cluster 2, 16 items), keywords such as poverty, income distribution, inequality, growth, employment, social policy, and such, focused on poverty and income distribution. Next, in the blue cluster (Figure 4a, cluster 3, 10 items), keywords such as economics, developing countries, income, social development, low-income population, economic and social effects, socioeconomic status, and such, concentrated on the aspect of “Socioeconomic status”. In the yellow cluster (Figure 4a, cluster 4, 10 items), keywords such as Asia, India, China, Eurasia, rural economy, rural area, rural development, and such, were associated with "region development" topics.

As is shown in Figure 4b, different colors were used to represent the time-varying keyword co-occurrences from 2006 (in dark purple) to 2012 (in yellow). It may be seen that for a keyword or term belonging to "region development" of Cluster 4, the average year of publication is the year 2006. For keyword in Cluster 1 "economic development," the average publication year has shifted to the period from 2008 to 2010. In the yellow period (around 2012), keywords that belong to cluster 3 of “Socioeconomic status” appear, which is still a hot topic on the economic scene is today.

Conclusions and research opportunities

This analysis evaluated the global research trends in economic development and poverty publications from 1970 to 2019. In the last 20 years, the issue of economic development and poverty has been a field with extensive studies, most significantly since the year 2000. There is an increasing interest among researchers related to economic growth and development and poverty, which is consistent with the fact that economic growth and development, are one of the best directions on the path to poverty reduction.

This analysis used the SCOPUS databases to retrieve publications from 1970 to 2019. The survey was conducted during the first week of February 2020, and a total of 5,337 publications were returned from the main search. Regarding the number of publications per year, a growing pattern of Poverty and Economic growth and development occurs in the last forty years. With 21 publications, Martin Ravallion is the author, while "A new data set measuring income inequality" (1996), by K. Deininger and L., is the most cited article. Data show the greatest number of publications (99) in the World Development Journal. World

Development Journal and Journal of International Development have the largest node sizes. By evaluating the countries that were most influential based on the number of publications published in the collection by each country, we concluded that, with 1.262 publications, the USA was the first. The most frequently used keyword is 'poverty' with the highest frequency of occurrence, followed by 'economic growth', 'economic development', 'poverty alleviation', etc. Broader research should include more keywords in analysis in first “disease”, “health”, “infection”, etc.

As far as constraints of this bibliometric study, the main collection was limited to the SCOPUS database. Different international databases (e.g., WoS or PubMed) should be combined in future research. However, the Scopus database was picked as a data source, because it is the largest citation and abstract database of peer-reviewed scientific literature, and the most widely used for search and analysis of scientific publications. Secondly, the bibliometric method of research could be performed only for the current classifications used in SCOPUS. Based on these constraints, a more in-depth review of the content is recommended for further research in the characterization of the bibliometric analysis.

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Appendix 1

	Social Sciences		Business, Management and Accounting		Economics, Econometrics and Finance	
	Total number of publication	Topic related publication	Total number of publication	Topic related publication	Total number of publication	Topic related publication
1970	15.109	1	2359	0	1869	1
1971	16.149	0	2462	0	2176	1
1972	17.387	0	2747	0	2189	0
1973	19.007	1	3475	0	2425	0
1974	20.704	4	4053	0	2990	0
1975	21.653	3	4181	0	2902	2
1976	22.852	1	4322	0	3096	3
1977	24.479	0	4751	0	3528	1
1978	26.326	5	4901	1	3973	2
1979	28.775	0	5170	1	4676	2
1980	30.215	4	5409	2	4329	3
1981	32.021	4	5827	0	4594	2
1982	34.614	6	6550	1	4910	3
1983	36.090	2	7346	0	5166	1
1984	37.991	10	7804	2	5526	4
1985	38.033	8	7992	0	6273	9
1986	39.479	6	8293	0	6165	3
1987	41.473	7	8556	0	6320	2
1988	43.492	7	9511	1	6599	3
1989	45.241	15	10296	2	7120	5
1990	47.687	18	12555	2	7605	7
1991	49.002	17	12441	4	7879	7
1992	50.473	36	13402	1	8217	10
1993	53.583	26	14392	0	8704	9
1994	55.605	16	15797	1	9527	7
1995	58.451	33	17139	2	10191	11

1996	66.062	33	24345	3	12322	15
1997	67.021	32	23613	2	12253	9
1998	70.735	43	25335	1	12800	16
1999	70.928	47	25417	5	13680	16
2000	77.774	76	29376	3	15289	26
2001	80.988	64	41890	1	15097	26
2002	93.231	78	44986	11	16809	29
2003	106.868	69	49432	13	25644	37
2004	111.919	90	49356	17	26120	55
2005	129.065	92	63558	21	31445	51
2006	145.746	114	63557	27	33155	48
2007	162.846	123	66014	30	36553	59
2008	184.511	136	66478	33	40162	80
2009	203.227	133	66256	38	43688	90
2010	218.170	149	72548	47	48128	110
2011	240.607	176	73961	40	49471	82
2012	258.481	169	71518	48	54149	97
2013	277.656	166	80388	63	63616	121
2014	276.118	212	80784	74	61284	118
2015	287.708	176	81655	79	64089	125
2016	300.127	181	91990	80	67930	115
2017	321.212	209	98061	92	71780	143
2018	326.270	204	95726	91	66435	127
2019	338.553	212	106419	80	60999	104

Appendix 1 (Cont'd) Data collected from the Scopus database on October 1st 2020.