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Mapping Three Decades of Human, Economic, and Sustainable Development Research: A SPAR-4-SLR-Based Bibliometric Analysis

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Abstract

The present work synthesises the existing literature on human development, economic growth, economic development, and sustainable development. Addressing the limited use of the Systematic Literature Review (SLR) method in these areas, this work fills an important gap. Using the SPAR-4-SLR framework for article selection, 593 research articles were identified for the bibliometric analysis. Key bibliometric indicators, including co-occurrence, keyword analysis, bibliographic coupling, and thematic analysis, were employed. The analysis reveals five major thematic areas: Growth and Development, Environment and Health, Energy and Environment, Human Development and Sustainable Development. Notably, emerging patterns highlight the growing integration between environmental sustainability and human development strategies. The United States, India, China, and the United Kingdom have emerged as leading contributors to the field. By combining bibliometric and SLR methodology, this paper offers a rigorous and updated synthesis of research trends. This synthesis provides a foundation for future research by identifying key trends and suggesting areas for interdisciplinary exploration.

Keywords: human development, economic growth, economic development, sustainable development.

1. Introduction

The dethroning of income growth as an indication of a nation's well-being paved the way for more comprehensive and holistic approaches to measure the well-being

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of nations. The paradigm shift from measuring an economy's per capita income increase to measuring the composite index values of the Human Development Index has been a major milestone in the discipline of Development Economics. The main reason that, in a way, led to the origin of the concept of human development is the heavy criticism of the concept of economic growth, as economists in the vast majority have discarded the concept based on its unidimensionality and narrow approach (Stanton, 2007). On the contrary, Human Development is a multidimensional and comprehensive concept that not only incorporates economic growth as one of the dimensions, but also incorporates education indices and health indices (HDR, 1990). Furthermore, the concept of Human Development has evolved since its first official appearance in the United Nations Development Programme's (UNDP) maiden Human Development Report (HDR, 1990). The new dimensions of human development have been incorporated in the UNDP Report (HDR, 1994), in which the Human Security, Dignity, and Human Rights were brought into the conceptual space of Human Development. The protagonist of the concepts, Mehboob-Ul-Haq, further explained the concepts in the development report (HDR, 1994), and elaborated on the concept of human security and its seven dimensions (threats), and dignity and human rights. However, the concept of human development is also widely criticised based on its comprehensiveness, as it attempts to measure everything and considers everything as a dimension (Owen, 2004). However, the report accommodates many concepts as supplementary concepts to human development, which are not incorporated into the actual calculation of the Human Development Index.

Simultaneously, Sustainable Development has emerged as a parallel concept that attracted global attention. It emerged during the 1970s onwards and was formally defined by the World Commission on Environment and Development (WCED, 1987). The United Nations Framework Convention on Climate Change signed the Kyoto Protocol in 1997, which substantiated reducing the emissions of greenhouse gases from the developed nations. The global sustainability index was launched for high-profit companies that follow sustainable practices (Global Sustainability Index, 1999). Furthermore, the UN launched the Millennium Development Goals, which laid down eight global goals focused on the alleviation of poverty, disease, hunger, environmental degradation, illiteracy, etc. (MDGs, 2000). With the successful completion of the MDGs in 2015, the UN further enlarged the coverage of the concept of sustainability and laid down 17 Sustainable Development Goals (SDGs, 2016); the timeline assigned for the completion of these SDGs is 15 years, which is also called the Agenda 2030.

The literature available on human development and sustainable development is fragmented, and therefore requires a systematic approach to analyse. The present work is an attempt to systematically analyse the available literature on human development, economic development, economic growth, and sustainable development. The author used sustainable development as an additional keyword to find the articles that show co-occurrence of both economic development and sustainable development. Environmental sensitivity is quintessential in the process

of economic development, as any improvement achieved on the three dimensions of development: education, health, and standard of living, by disrupting the ecological balance could not be considered as a sustainable process of achieving higher human development status (Maje et al.,2025; Mutani et al., 2024). The simultaneous occurrence of human development and sustainable development in any publication would highlight environmental sensitivity. The publication of research articles with the simultaneous occurrence of economic development and sustainable development over the period of time could be best represented by the year-wise distribution of the articles. An analysis of the publication trend and text analysis using the bibliometric analysis is thus appropriate in this situation, as it ensures better analysis and is capable of handling the extensive datasets (Donthu et al., 2021).

The available literature based on the author's selected keywords suggested that there are very few research publications that follow a systematic literature review (SLR) and thus highlights the importance of this work (Daly & Garroud, 2022; Vandenhole, 2018; Wekullo et al., 2018; Zaman & Moemen, 2017; Dasgupta, 2009; and Haines, 2001). The review papers highlighted the key focus of the literature review, but they did not conduct any systematic analysis of the research papers. It is thus quintessential to conduct a bibliometric analysis of the available literature to identify the hidden visual networks among the keywords, authors, source, and country (Sorelle et al., 2024; Mahmood et al., 2024).

The concepts, except for growth, are multi-dimensional; as a result, articles show the existence of the correlated concepts, sub-concepts, dimensions, or indicators of the mentioned keywords. For instance, the concept of human development is multidimensional and is composed of Education, Health, and Standard of Living dimensions. Given the condition, the bibliometric analysis invariably reports a higher occurrence of these supplementary concepts, too. Similarly, for SDGS, the non-occurrence of the related 17 goals is impossible; hence, the occurrence of the supplementary concepts to the main concept is also detrimental, and the present work attempts to consider the related concept and represents it in the visual networks and tabular representation of the data analysis.

Out of 593 articles, only 24 were review papers, and a very few actually used the SLR method. The paucity of the systematic literature review based on Human Development, Sustainable Development, Economic Development and Economic Growth. The present work not only synthesises the available literature, but also attempts to highlight the most pertinent literature base. The author will be able to map the publications trend, clustering, thematic analysis based on titles and abstracts, and establishment of the visual networks.

2. Objectives

The main objectives of the study are as follows:

1. To analyse the relationship among the keywords with the help of bibliometric analysis of data.
2. To identify the most potent literature from the dataset.

3. To identify the most cited work of the researchers working in the area of sustainability and Economic Development.
4. To find the potential clusters of the most occurring terms based on the analysis of titles and abstracts.

The main objective of the present work is to suggest the main authors, major sources, and important keywords to assist researchers working in the same area.

3. Research Methodology

The study follows a systematic approach to analyse the existing literature on selected keywords. The systematic literature review helps in analysing, synthesising, and clustering the research articles (Tang et al., 2021). The role of systematic analysis of the available literature is indeed crucial in representing an in-depth summary of the existing literature; the author may use various tools for this analysis, and there are a few AI-based tools as well (Mackenzie et al., 2012). The frequently used tools are: VOSViewer, Biblioshiny, BibExcel, CiteSpace, Sci2, and Netdraw. The present analysis, however, is conducted on VOSViewer, as it has a user-friendly interface and its power to provide understandable visual networks and thematic diagrams.

The author adopted the SPAR-4-SLR protocol to acquire and assess the data and their quality. Compared to other available techniques like PRISMA and PRISMA-P, SPAR-4-SLR is best suited for thematic analysis of the text data (Paul et al., 2021).

Table 1. SPAR-4-SLR framework

Assembling	**Identification** **Domain**: Human Development, Economic Growth, Economic Development, and Sustainable Development **Research Questions**: 1. What are the available concepts, theories, and hypotheses available in the existing literature? 2. What are the applications of Human Development, Economic Growth, Economic Development, and Sustainable Development? 3. What are the existing research gaps and the future scope of research on the selected keywords? **Source Type**: Peer-reviewed articles published in national and international journals. **Source Quality**: Scopus Indexed
	↓

	Acquisition **Search Mechanism and material acquisition**: Scopus Database **Search Period**: 1900 to 2023. **Search Keywords**: "Human Development" OR "Sustainable Development" OR "Economic Growth" OR "Economic Development" Article returned from search: Scopus (n=613)
	↓
Arranging	**Organisation** **Organising Codes**: Article title, Journal title, citation number, author(s) name, abstract, article type. **Organising Framework**: Theory-Context-Characteristics-Methodology (TCCM)
	↓
	Purification **Article type excluded**: articles excluded due to missing values (n=12), language (n= 4), and different fields of work (n=4). **Article type included**: n = article that matches the area of the selected keywords (Human development, sustainable development, economic growth, and economic development) (n=593)
	↓
Assessing	**Evaluation** **Analysis method**: content and bibliometric analysis **Agenda Proposal Method**: Thematic analysis
	↓
	Reporting **Reporting convention**: Tables based on the TCCM framework and Visual network analysis. **Limitations**: articles written in English only were selected, and both types of literature is used (review type and article type). **Source (s) of support**: No financial support is received for this review.

Source: authors' contribution.

The present work follows a retrospective research design; the data collected was secondary, which was extracted from the Scopus database based on the selected keywords, and the author was able to find data from 613 research articles. In the cleaning of the data, after excluding the data points with missing values, a total of 593 research articles were used for the final data analysis.

The researcher used the bibliometric software, *VOSviewer,* which is an open-access software available for free for bibliometric and bibliographic analysis. The present work used bibliographic-coupling and co-citation network analysis to identify various clusters of networks. The technique has high relevance and is also suggested in the literature (Godell et al., 2021). It is capable of handling large data sets with ease, and also helps readers in understanding the evolution of the concepts with its trend analysis. The present piece of research is useful in guiding the potential researchers in the area to select a particular journal or perhaps align their work with the scope of the research journals (based on the intensity of articles published in that journal) (Donthu et al., 2021; Ciampi et al., 2021; Pattnaik et al., 2021).

The Bibliographic coupling and Co-citation are useful for elucidating the dataset and are capable of drawing network connections among keywords (Boyack & Klavans, 2010; Waltman et al., 2010). The analysis is based on the Louvain algorithm, where the algorithm forms various nodes that respectively analyse the review articles, referred citations, author keywords, document source, etc.

4. Data Analysis

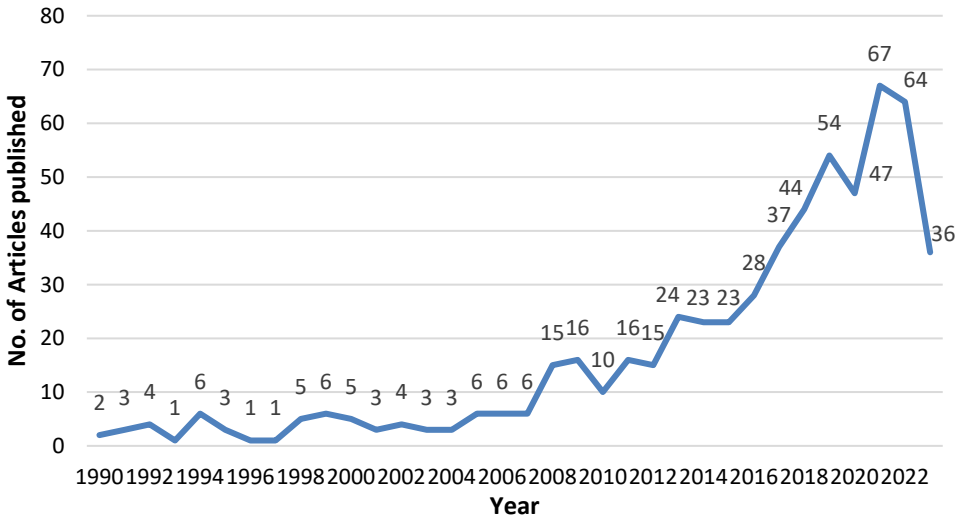
The present analysis of the data is divided into the following sections:

4.1 Trend Analysis of the Research Publications
4.2 Descriptive Analysis
4.3 Bibliometric Analysis of all Keywords
4.4 Bibliographic Coupling
4.4.1 Bibliographic coupling of the articles
4.4.2 Bibliographic coupling of the source of research articles
4.5 Thematic Analysis of the text data
4.6 Core Findings

4.1 Trend Analysis of the Research Publications

Figure 1 represents the distribution of the year-wise number of articles published on the selected keywords, Economic Growth, Human Development, Development and Sustainable Development. The trend shows no steep increase in the number of articles published from 1990 to 2007, as Sustainable Development and Human Development as concepts came into being in the late 80s and made their public appearance in the early 1990s. It took around two decades to recognise the importance of the concepts, as we can see a steeper increase after 2007. The total number of articles published in 2023 is 36. The mere availability of data on several articles will not help accomplish the objective of the work, i.e., identification of the vital literature. So, the bibliometric analysis to find the predominant literature is quintessential.

Figure 1. Publication trend of the research based on human development, sustainable development, economic growth, and economic development



Source: authors' contribution.

4.2 Descriptive Analysis

Table 2 represents the distribution of the top-cited research articles, review papers, and conference papers based on the authors, year, article source, citations, and country. The top-cited research publication's source was given as An Uncertain Glory: India and Its Contradictions, with a citation of 731, and was published in 2013. Drèze and Sen are the forerunners of the field of development economics and have made pertinent contributions to the discipline.

Table 2. Distribution of highly cited research articles based on author, article source, citation, and country

Author	Year	Article Source	Citation	Country
De Corato U.	2020	Science of the Total Environment	130	Italy
Baklanov et al.	2018	Urban Climate	107	Switzerland
Waldron et al.	2017	Nature	176	United Kingdom
Stambouli A.B.	2011	Renewable and Sustainable Energy Reviews	111	Algeria
Costantini V., Monni S.	2008	Ecological Economics	206	Italy
Drèze J., Sen A.	2013	An Uncertain Glory: India and its Contradictions	731	India
Jolly et al.	2004	UN Contributions to Development Thinking and Practice	154	Kenya

Source: authors' contribution.

4.3 Bibliometric Analysis of All Keywords

Table 3 represents the result of the bibliometric analysis of the co-occurrence of all keywords. The analysis was executed in *VOSviewer* with a filter of a minimum of 5 citations. The analysis provided 6 clusters and 204 items, with reference to the frequency of the co-occurrence, the mode value of cluster 1 is 463 of keyword *growth and development,* and an overall link strength of 3969. So, cluster-1 can be named as Growth and Development.

Similarly, in cluster 2, the mode value has the highest frequency of 327 for the keywords *environment and health,* with a total link strength of 3141. It is rational to name cluster 2 as Environment and Health, as most of the keywords in the cluster share the same conceptual space that environment and health share.

Similarly, the following clusters, cluster 3, cluster 4, cluster 5 and cluster 6, respectively, are named as Energy and Environment, Economic Development and Environment, Human Development and Sustainable Development, and Sustainable Development and Emission Control. With a corresponding co-occurrence value of 218, 273 (overall cluster's value), 229 (overall cluster's value), 125 (overall cluster's value), respectively.

In a nutshell, the combined co-occurrence value of the table is 1744 and the Total Link strength of 15532. The distribution of the co-occurrence values shows that cluster; growth and development, environment and health, energy and environment, economic development and environment, and sustainable development and emission control holds proportionately 26.54 percent, 18.75 percent, 18.75 percent, 15.38 percent, 17.14 percent, and 7.16 percent of the total co-occurrence values, respectively.

In conclusion, the *growth and development* qualify as the most pertinent cluster with the highest percentage share in the co-occurrence analysis. Followed by cluster 2 (Environment and Health) with second second-highest values. The least contributor in the bibliometric analysis of all the keywords is cluster *sustainable development and emission control,* with a mere contribution of 7.16 percent share in the total co-occurrence value.

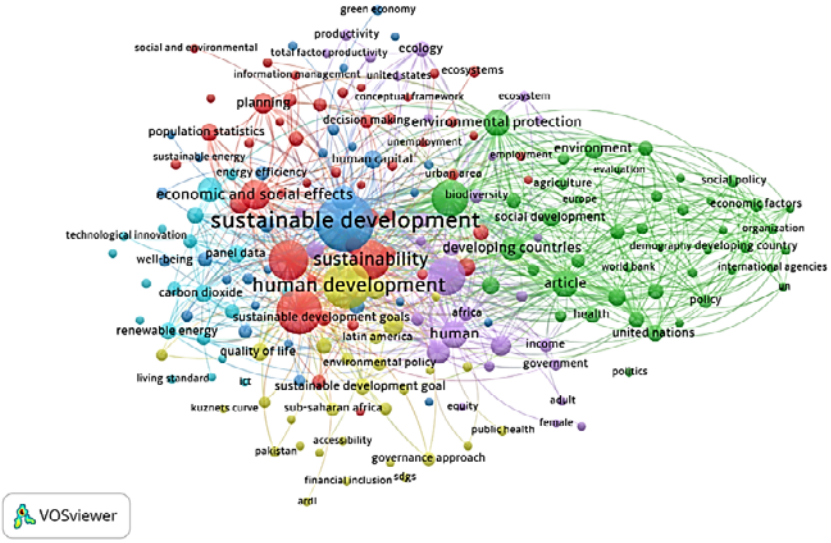
Table 3. Distribution of the co-occurrence analysis of all keywords

Cluster	Items	All Keywords	Occurrence	TLS
Cluster 1 Growth and Development	47 items	Competitiveness, conceptual framework, decision making, developed world, development, economic analysis, economic and social effect, economic growth, ecosystems, employment, environmental management, environmental performance, food security, food supply, globalisation, gross domestic product, growth rate, human development index,	5, 6, 12, 12, 28, 59, 135, 9, 7, 10, 8, 8, 5, 9, 18, 6, 104, 6, 16	25, 50, 141, 108, 76, 284, 617, 944, 118, 60, 101, 60, 59, 65, 49, 150, 44, 867, 40, 111

Cluster	Items	All Keywords	Occurrence	TLS
		income distribution, and poverty alleviation, etc.		
Cluster 2 Environment and health	44 items	Agriculture, conservation of natural resources, deforestation, demography, economic factors, environmental protection, health, health care planning, human rights, international cooperation, organisation, policy, public policy, social change, water supply, and world bank, etc.	9, 14, 9, 5, 12, 47, 16, 5, 10, 17, 8, 12, 15, 7, 9, 7	107, 285, 123, 98, 226, 586, 203, 110, 171, 265, 186, 210, 226, 123, 145, 77
Cluster 3 Energy and environment	33 items	Carbon emission, carbon footprint, circular economy, decoupling, efficiency, energy efficiency, energy security, green economy, green growth, income inequality, millennium development goals, nature-society relationship, sustainable development, welfare, and well-being, etc.	9, 7, 7, 9, 7, 14, 6, 8, 5, 5, 10, 6, 218, 6, 10	116, 99, 36, 86, 59, 130, 51, 29, 35, 5, 55, 69, 1636, 24, 50
Cluster 4 Economic development and environment	30 items	Accessibility, air pollution, COVID-19, environmental Kuznet's curve, environmental quality, financial inclusion, global perspective, human development, investment, prevention and control, public health, quality of life, urbanisation and urban population, etc.	5, 6, 5, 9, 10, 5, 5, 145, 17, 5, 7, 20, 27, 7	31, 69, 38, 72, 104, 21, 49, 992, 187, 46, 66, 151, 271, 74
Cluster 5 Human Development and Sustainable growth	30 items	Adult, biodiversity, controlled study, ecological footprint, ecology, economic development, education, energy consumption, government, life expectancy, productivity, sustainable growth, total factor productivity, etc.	5, 13, 6, 21, 16, 95, 19, 8, 10, 11, 10, 10, 5	77, 189, 106, 186, 197, 989, 162, 143, 126, 141, 100, 91, 67
Cluster 6 Sustainable Development and emission control.	20 items	Alternative energy, carbon dioxide, co2 emissions, emission control, energy utilisation, fossil fuels, global warming, living standard, renewable energy, renewable energy consumption, technological innovation, etc.	12, 20, 12, 5, 18, 7, 10, 5, 5,19, 5, 7	161, 283, 146, 64, 224, 71, 130, 56, 196, 73, 66

Source: authors' calculation.

Figure 2. Visual network of the bibliometric co-occurrence of all keywords



Source: authors' calculation.

Figure 2 represents the visual network of all the keywords based on their co-occurrence. It shows the visual representation of Table 3, which exhibits that the most used keywords are Sustainable Development, Sustainability, Human Development, Economic and social effects, developing countries, human, sustainable development goals, environmental protection, biodiversity, human capital, renewable energy, and quality of life. The discipline of development economics follows a comprehensive approach and, generally, the articles written in the area of development often use the above-mentioned keywords. In other words, it highlights the focus of contemporary research that can guide researchers to select the area of interest before the selection of the research problem.

4.4 Bibliographic Coupling

The current research work exhibits the bibliographic coupling of the scientific research articles to enumerate the shared relationship between the articles. The mechanism uses the network of references and citations to establish the networks. The algorithm of the methods maps multiple documents and searches for common citations and references that indicate that the articles share a common theme or common research area. It is a quantitative technique that uses frequencies as a means to identify the networks. The strength of the link shared by two articles is represented by the frequency of the common references used by both articles, and graphically, it is represented by the circles that represent the individual articles and the lines that represent their shared networks. The analysis is further subdivided into bibliographic coupling of the articles and the source of the articles.

4.4.1 Bibliographic-Coupling of the Articles

The section identifies the shared linkage between the articles using the bibliographic coupling. It uses the citation count and the total link strength to highlight the importance of the clusters.

Table 4. Distribution of the bibliographic coupling of the documents

Cluster	Item	Documents	Citation	Total Link Strength
Cluster 1	7	(Adewale, 2021)	56	5
		(Azam, 2015)	116	3
		(Omri, 2020)	79	4
		(Omri, 2021)	62	11
		(Sharma, 2021)	64	12
		(Yumashev, 2020)	110	11
		(Zaman, 2017)	250	14
Cluster 2	7	(Costantini, 2008)	206	19
		(Dasgupta, 2010)	92	3
		(Kosack, 2003)	159	6
		(Lim, 2018)	62	13
		(Martin, 2016)	108	11
		(Mcgrath, 2016)	55	15
		(Roy, 2014)	9	9
Cluster 3	6	(Frugoli, 2015)	60	8
		(Pen, 2016)	88	3
		(Popescu, 2017)	94	8
		(Sabatini, 2008)	127	3
		(Visbeck, 2014)	79	14
		(Winkler, 2013)	86	1
Cluster 4	5	(Anand, 2000)	462	9
		(Drèz, 2013)	731	2
		(Jolly, 2004)	154	3
		(Mukherjee, 2013)	56	13
		(Shah, 2008)	61	1
Cluster 5	3	(Beling, 2018)	52	4
		(Hickel, 2019)	165	22
		(Najam, 2003)	69	1
Cluster 6	3	(Lucas, 2020)	54	12
		(Van, 2017)	403	7
		(Von, 2016)	125	11
Cluster 7	3	(Bravo, 2014)	85	10
		(Deng, 2014)	58	1
		(Huang, 2016)	102	4
Cluster 8	2	(Schandl, 2016)	327	11
		(Schandl, 2018)	178	16

Source: authors' calculation.

Table 4 represents the analysis of the documents based on the bibliographic coupling. The analysis was applied to 593 articles with a minimum count of 50 citations, which provided 50 articles that fulfilled the selection criteria.

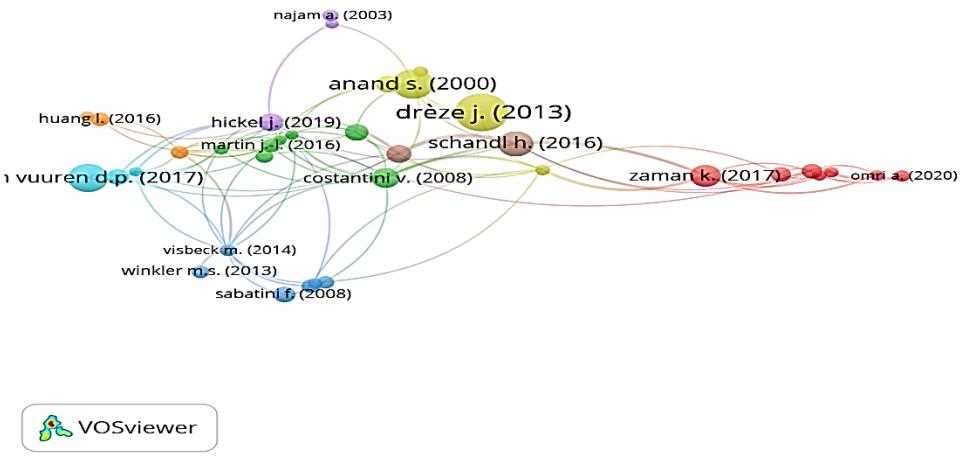
The clusters represent the in-text citations of various articles with the authors' name and their corresponding number of citations. Cluster 1, with the highest frequency value of 250 citations of (Zaman, 2017), is the mode of cluster 1 and can be regarded as the most important piece of literature with the highest citations. Similarly, the mode values of the cluster 2, cluster 3, cluster 4, cluster 5, cluster 6, cluster 7, and cluster 8, has (Costantini, 2008), (Sabatini, 2008), (Drèze, 2013), (Hickel, 2019), (Van, 2017), (Huang, 2016), and (Schandl, 2016) being the articles with highest citations.

However, the work of (Azam, 2015), (Yumashev, 2020), (Kosack, 2003), (Martin, 2016), (Anand, 2000), (Jolly, 2004), (Von, 2016), and (Schandl, 2018) collectively with the above mentioned articles, forms the vital literature base for the selected keywords of the study.

The total citations received by all the documents in the table is 5044. The cluster 1, cluster 2, cluster 3, cluster 4, cluster 5, cluster 6, cluster 7, and cluster 8, respectively, hold 14.41, 13.69, 10.58, 29.02, 5.67, 11.53, 4.85, and 10.01 per cent. This indicates that cluster 4 is comparatively caters to the most relevant literature base as far as the selected keywords are concerned.

In the nutshell, the analysis suggests that the researchers' who intends to work in the area of human development, sustainable development, economic growth and economic development, must incorporate the highly cited research work; (Drèze, 2013), (Anand, 2000), (Van, 2017), and (Schandl, 2016), with 731, 462, 403, and 327 citations respectively.

Figure 3. Visual networks of the bibliographic-coupling of the documents



Source: authors' calculation.

Figure 3 shows the visual network of the highly cited documents based on the bibliographic coupling of the research articles. The concentration of the citations is given by the size of the circle, and the clusters and shared networks are represented by various colour combinations. The documents with the highest citation score are (Drèze, 2013), (Anand, 2000), (Van, 2017), and (Schandl, 2016). The shared network of cluster 1, cluster 2, cluster 3, cluster 4, cluster 5, cluster 6, cluster 7, and cluster 8 is represented by red, green, blue, yellow, lavender, sky blue, orange, and brown colours.

Table 5. Bibliographic-coupling of the source of research articles

Cluster	Items	Source	Count	Total Link Strength
Cluster 1 Environment and efficient utilisation of resources	6	Energies	6	60
		Environment, Development, and Sustainability	5	82
		Environment Science and Pollution research	8	152
		International Journal of environmental research and public health	7	99
		Journal of Cleaner Production	11	129
		Renewable and sustainable energy reviews	5	102
Cluster 2 Sustainable Development	5	Ecological Economics	6	99
		Economy of regions	5	10
		Science of the total environment	5	31
		Sustainability	23	202
		Sustainable development	10	196

Source: authors' calculation.

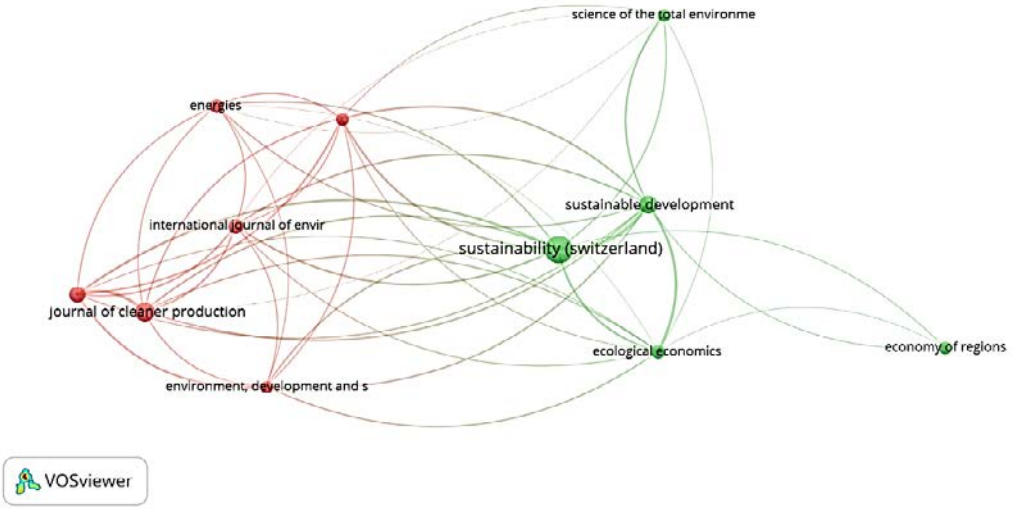
Table 5 represents the distribution of the results of bibliographic coupling of the articles based on their source of publication. Out of the total of 419 sources, with a minimum citation of 5, only 11 sources met the threshold. The analysis of the data provided two clusters: cluster 1, and cluster 2, named Environment and efficient utilisation of resources, and sustainable development, respectively. Cluster 1 contains: Energies, Environment, Development and Sustainability, Environment Science and Pollution research, International Journal of Environmental Research and Public Health, Journal of Cleaner Production, Renewable and Sustainable Energy Reviews. In cluster 1, the Journal of Cleaner Production, with 11 articles, is the highest publisher. The source with the least number of publications is Environment, Development and Sustainability, and Renewable and Sustainable Energy Reviews, with a count of 5 documents each journal and a TLS of 82 and 102, respectively. The cluster has 42 documents in total, and the collective TLS value of 624.

Cluster 2, labelled as Sustainable Development, contains: Ecological Economics, Economy of regions, Science of the total environment, Sustainability, and Sustainable Development. The journal with the highest number of documents is

Sustainability, with a count of 23 and a corresponding TLS value of 202. The least number of documents published by a journal is Economy of regions, with a count of 5 and a TLS of 10. Cluster 2 has 49 articles and a combined TLS value of 538.

The bibliographic coupling of the research articles based on the source of articles provided two clusters with a total of 11 items. The analysis provided a total of 91 articles that met the threshold of 5 citations, and a combined TLS value for the overall table of 1162. As far as the contribution of each cluster to the total network is concerned, cluster one accounts for 46.15 percent of the total number of documents published under the sources mentioned in the journal contained by cluster 1. Symbiotically, the cluster 2 accounts for 53.85 percent in terms of document count. In conclusion, the sources like Sustainability, Journal of Cleaner Production, and Sustainable Development and the selected journal that publishes work on human development and sustainable development.

Figure 4. Visual networks of the bibliographic-coupling of sources



Source: authors' calculation.

Cluster 1 is represented by the red colour, and the networks shared between the items of the cluster are represented by the red lines. The concentration of the articles is represented by the size of the circles, where the smaller circle shows less density and the bigger circle shows more concentration of the articles published in a journal. Cluster 2 is represented by the green colour, and its shared network is represented by the green lines. The cluster one has the highest density in the Journal of Cleaner Production, and cluster 2 shows more concentration in Sustainability and Sustainable Development.

4.5 Thematic Analysis of the Text Data

Table 6. Thematic analysis of the concepts based on its occurrence

Clusters	items	Keywords	Occurrence	TLS
Conceptual Space of Human Development and Economic Growth	22	Access, challenge, concept, development, economic growth, education, growth, health, human development, India, issue, life, natural resource, need, person, population, poverty, resource, society, time, use, way	70, 120, 70, 435, 369, 109, 253, 102, 409, 55, 110, 83, 62, 113, 86, 103, 91, 129, 97, 84, 107, 85	661, 964, 591, 3318, 2890, 1039, 1960, 937, 3038, 469, 927, 766, 561, 963, 807, 944, 859, 1128, 839, 786, 945, 726
Measurement of Human Development Index	12	Analysis, country, data, effect, GDP, HDI, Human Development Index, indicator, model, period, relationship, study	173, 316, 118, 126, 64, 67, 136, 155, 144, 93, 132, 232	1494, 2643, 1062, 1104, 616, 647, 1176, 1386, 1228, 781, 1173, 1886

Source: authors' calculation.

Table 6 represents the distribution of the most occurring keywords in the database, based on the analysis of the text data (both titles and abstracts). The author used a filter of 50 citations, and out of 14768 keywords, only 57 met the threshold. The analysis provided 2 clusters with 34 items, with a further distribution of 22 and 12 items in cluster 1 (Conceptual Space of Human Development and Economic Growth) and cluster 2 (Measurement of Human Development Index), respectively.

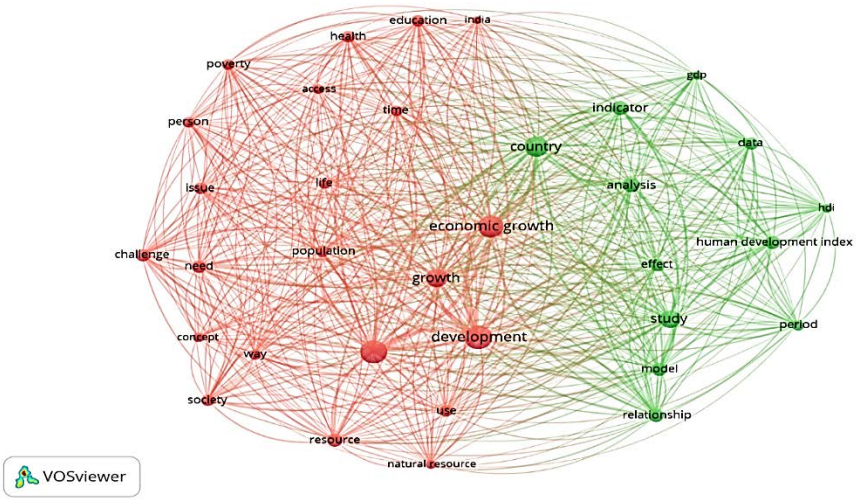
Cluster 1 is labelled as "Conceptual Space of Human Development Index and Economic Growth", as the keywords indicate the terminologies related to human development and economic growth. The repeated use of economic growth, development, health, and human development, etc., confirms that the scope of the cluster covers the conceptual space of human development and economic growth. The most occurring keyword is development, with an occurrence of 435 with a TLS value of 3318, while the least occurring keyword within the cluster is natural resource, with an occurrence of 62 with a TLS value of 561.

Cluster 2 is labelled as "Measurement of Human Development Index", as the keywords are related to the methodology of calculating of human development index. It has the most occurring keywords, i.e. 'country', 'study', 'Human Development Index', and 'indicators', with an occurrence of 316, 232, 155 and 144 and the TLS of 2643, 1886, 1386, and 1228, respectively. The least occurring keyword in the text data within the cluster is 'effect' and 'GDP', with occurrences of 64 and 67 and TLS of 616 and 647, respectively.

The cluster one has a total occurrence of 3142 (collectively), and a combined TLS of 26,118 and cluster 2 has a combined occurrence of 1756, and a TLS of 15,196. In

conclusion, cluster one holds 64.14 percent of the total occurrence, and cluster 2 holds the remaining 35.85 percent of the occurrence. In conclusion, the most occurring words across the clusters are Development, Country, Study, Human Development Index, and Indicators. It indicates that the text data has found astounding repetition of these words across the articles, and incorporation of these words while preparing a manuscript for publication would be reasonable.

Figure 5. Visual Networks of the most occurring words in the dataset based on thematic analysis of the Scopus text data



Source: authors' calculation.

Figure 5 represents the clusters and their shared network of occurrence with their keywords. The red colour represents the "Conceptual Space of Human Development and Economic Growth" (Cluster 1), and the red lines represent its shared network of occurrence. The circles represent individual words, and the size of the circle represents the higher frequency of the occurrence. The most occurring word in cluster 1 and across the clusters is development, and is visible by the size of the circle with the label development. Similarly, the green colour represents the "Measurement of Human Development Index" (Cluster 2), and the green lines show its shared network between the items of the cluster. The most occurring words in the cluster 2 are Country, Study, Human Development Index and Indicator and are also visible by the size of the circles.

In a nutshell, the articles can be broadly categorised under the category of conceptual papers and methodology papers, while the former studies the concepts and the latter suggests the methodologies and methods for the calculation of Human Development Index.

4.6 Core Findings

The introduction section highlights the importance of the present thematic analysis of Human Development, Economic Development, Economic Growth, and Sustainable Development. The section highlighted that less number of research articles based on the systematic literature review (SLR) method are available in the SCOPUS dataset, and thus explains the significance of conducting the present work.

The data analysis section 4.1 revealed that the publication of the articles based on the selected keywords is on the increasing side. The publications started picking up pace from 2008 onwards. The data revealed that by the end of September 2023, 36 articles had been published, and the count is expected to rise. It is also pertinent to mention that the concept did not become global overnight, but as the publication trend reveals, it took around two decades for the concept to gain global coverage.

The analysis revealed that Growth and Development, Environment and Health, Energy and Environment, Economic Development and Environment, Human Development and Sustainable Development, and Sustainable Development and Emission Control collectively highlight the scope of the study area expressed by these themes to help researchers select the area of interest in a scientific manner.

To mention, the most potent piece of literature based on the citation score is given by the following articles (Drèze, 2013), (Anand, 2000), (Jolly, 2004), (Mukherjee, 2013), and (Shah, 2008), (Zaman, 2017), (Van, 2017), (Schandl, 2016), and (Costantini, 2008). It is quintessential for the researcher working in this area to incorporate these articles to enhance the quality of the literature base in their research work.

The author found that Sustainability, Journal of Cleaner Production and Sustainable Development are the major sources that contributed to the present dataset or in other words, these sources/journals are inviting and publishing comparatively more research on the selected themes. Potential researchers may consider accessing these sources to search relevant literature, and can also target these sources from a publication perspective.

Based on the results, the articles were segregated into two categories, viz., “Conceptual Space of Human Development and Economic Growth” and “Measurement of Human Development Index”.

5. Summary and Conclusion

The paper followed a systematic literature review (SLR), and the work is divided into five major sections: introduction, objectives, research methodology, data analysis, and summary and conclusion. The introduction section highlights the importance of a systematic literature review of the present topic. The author has used the SCOPUS corpus of research articles based on the selected keywords. The author initially selected 613 articles, but after applying the inclusion and exclusion criteria, finally included 593 articles for further analysis. To conclude, the publication trend given in Figure 1 represents an increasing trend of the research articles being published from 2008 onwards. The data analysis highlighted that the most occurring

keywords across the dataset based on the bibliometric analysis are Sustainable development, human development, development, and economic development. The analysis based on bibliographic coupling of the articles revealed that (Drèze, 2013), (Anand, 2000), (Zaman, 2017) with 250 citations, (Van, 2017) with 403 citations, (Schandl, 2016) with 327 citations, and (Costantini, 2008) with 206 citations forms the most potent literature base for the selected keywords. As far as the journals/source of publication is concerned, Sustainability, Journal of Cleaner Production and Sustainable Development are the major sources that invite the research on the selected keywords, and may be used by the potential researchers to explore relevant literature that matches their area of interest. The thematic analysis of all the most repeated words (filtered by a minimum of 50 occurrences) revealed that development, country, study, human development index, and indicators are the words that showed the highest occurrence in the text data that are analysed from the titles and abstracts of 593 research articles. In conclusion, the individual researchers can consider the incorporation of these keywords in their work to increase the chances of article publication in the highlighted Journals.

6. Delimitation

The present work is a confined work based on the keywords: Human Development, Economic Growth, Economic Development, and Sustainable Development. The analysis and core findings extracted from the above discussion have a major limitation. It is based only on the corpus of the SCOPUS database and does not incorporate the datasets available on other databases of good-quality journals. It is thus the implications of the present analysis would only apply to the SCOPUS database and the researchers who are looking forward to publishing in Scopus-indexed journals. The author suggests that the researchers who wish to conduct a systematic literature review on the selected keywords can consider using datasets from different databases such as SCOPUS, Web of Science, JSTOR, Science Direct, ERIC, etc., to overcome the problem of generality. It is also suggested that researchers who wish to engage in an advanced analysis may conduct a two-fold analysis of the database extracted from various databases, and can identify the most potent piece of literature, and in the second stage, may compare the relevance of the selected articles with the theme of the work.

Future Scope

Future research may extend the study by utilising datasets from the Web of Science as well. A two-stage method—initial database-based literature identification and subsequent verification of thematic relevance—might be suggested. Additionally, researchers could study temporal evolution, new emerging terms, or regional differences in the context of Human Development, Economic Growth and Sustainable Development. Multidisciplinary investigation could also be improved by incorporating findings from environmental studies, public policy, education, and technology to strengthen future analyses. These broader multi-

disciplinary explorations will better inform academic conversation and policy-making more forcefully.

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