Research Trends on Environmentalism: A bibliometric analysis and Review of Literature

Md Safiqur Rahaman[1], Hardesh Kumar[2], Khadeeja MN Ansari[3], Ziaur Rahman[4]
[1] King Fahd University of petroleum and Minerals
[2] Kumaun University, Nainital
[3] Imam Abdulrahman bin Faisal University P.O
[4] Rabindra Bharati University

Abstract
The aims of this research is to evaluate the literature on Environmentalism indexed on the Web of Science between 1941 to 2020.The analysis is based on bibliometric methods to evaluate global research performance in environmental publications. Bibliometric software, namely Bibexcel, VOSviewer, Biblioshiny, and Microsoft Excel, was used to analyze the data. The result shows 4095 publications with 73829 citations between 1941 and 2020. The maximum number of papers, i.e., 295 published in 2020. The Journal Environmental Politics published the highest research paper with 114 publications. Milfont TL was the most prolific author with 10 papers. The USA is the leading contributed country with 1620 publications, and Michigan State University emerged as a top-performing organization. The USA and China together collaborated maximum research paper on Environmentalism. The study concludes that there is a need for further bibliometric study of related topics in Environmentalism.

Keywords: Environmentalism, bibliometric, literature review, research assessment, research productivity

1. Introduction

Environmental degradation has become a global concern for human survival, specifically in the 1900s. Countries organizations at the international and global level have continuously made an effort to tackle environmental issues bringing forth their expertise and advanced technologies. Nevertheless, the efforts seem to have fallen short of curbing deterioration and degradation because the rate of exploitation of nature has exceeded the rate of restoration activities. The rapid decline of the environment is felt in our daily lives-the air we breathe, the water we drink, and the land we live on. Environment engulfs us everywhere, and we can't escape the consequences of degradation, for humans are the cause of it all.

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This brings us to the importance of studying environment for to survive, we need to have a better understanding of our physical space, what makes it healthy and what makes it sick. The dictionary of the environment gets renewed now and then with every new effort and finding. Examples are clean technology, environmental auditing, environmentally friendly products, etc. Before the 1960s, the word environment referred primarily to the work environment or home environment, not to nature, ecosystems, or the Earth. The word *environment* began to take its modern political, sociological, ecological, and global forms during the 1960s and early 1980s when the public demands for cleaner and safer living conditions became more vocal. Newly formed non-governmental organizations began to lobby governments and campaign to influence consumers and corporations, and as global scale problems began to move up national and international political agenda (Dauvergne, 2009).
The primary aim of all these efforts is to protect, conserve, and improve the existing state of the environment so that nature is restored and finds the balance between humans and nature. Various approaches, movements, and strategies formulated by individuals, governments, organizations, scientists, and experts worldwide to restore the environment can rightly be grouped under one terminology, *"Environmentalism.*" The term "environmentalism" refers to a comprehensive philosophy, ideology, and social movement centered on preserving, restoring, or enhancing the natural environment. Environmentalism is an endeavor to strike a balance between people and the many natural systems they rely on so that all components have a reasonable chance of surviving. Environmentalism is a social movement that uses lobbying, action, and education to influence the political process to safeguard natural resources and ecosystems. (Peet & Watts, 2002).

2. Literature Review

The environment is defined as a surrounding or conditions influencing the development or growth of an individual. It can be understood as a system that includes all living and non-living things: air, water, soil, vegetation, flora, and fauna. The environment has captivated decision-makers, scientists, and even laypeople in many regions of the world during the last two decades. Famines, droughts, floods, lack of fuel, firewood, and feed, pollution of the air and water, difficulties with toxic chemicals and radiation, depletion of natural resources, extinction of species, and threats to flora and fauna are all issues that they are becoming increasingly aware of. People are more conscious of the need of safeguarding natural environmental resources such as air, water, soil, and plant life, which make up the natural capital on which man depends. Dauvergne (2009) traces the history of the environment from its simple usage referring to work or home environment to its transformation to political, sociological, ecological, and global meaning in the 1960s. Public demands had been instrumental in giving new dimensions to the word *Environment.* The environment has now assumed global importance, reaching national and international political agendas. The environment concept is highly political, with varying definitions across and within society. To understand the diversity and

complexities of thousands of efforts and movements undertaken by individuals, organizations-governmental and non-governmental, experts, scientists to understand the environment, he had classified Environmentalism into four categories - scholarly Environmentalism, governmental Environmentalism, non-governmental Environmentalism, and commercial Environmentalism. According to Khan (2013), environmental deterioration affects all humans worldwide, regardless of nation, location, or race. The fact that the entire planet is a stakeholder raises questions about who should do what to address environmental deterioration. The environment encompasses all of life on Earth as well as the intricate relationships that connect the living and physical worlds. In a broad sense, this refers to all that exists in the air, land, and water. The author discusses significant environmental issues such as ozone layer depletion, hazardous waste, global warming, water pollution, loss of biodiversity, acid rain, climate change, overpopulation, exploitation of natural resources, deforestation, land degradation, desertification, and the nuclear issue. He put forth some significant remedies or solutions to tackle the issues. The article explored a number of solutions and strategies, but putting them into practice will need thorough investigation in order to maximize national advantages. The importance of local control and administration within a politically committed context in ensuring sustainable growth cannot be overstated. Dunlap and Jorgenson (2012) acknowledge the problems of environmental degradation becoming globalized in terms of their existence and impacts and the socioeconomic forces that generate them. The paper notes the growth of international awareness of environmental problems, examines the nature of environmental problems and their global reach and discusses how humans are increasingly pushing against global ecological constraints. It further examines the global politico-economic forces that generate and exacerbate ecological degradation worldwide. They believe while some forms of economic globalization have contributed to environmental degradation both within developing nations as well as globally, if enough pressure could be mounted by transnational environmental organizations and international non-governmental organizations more generally, both in collaboration with localized third-world environmental activism, it is possible that stronger international environmental regulations could be developed and enforced. The paper remarked at the end that the current ecologically unsustainable trajectory of humankind could be altered, but doing so will require globalization of effective social and political action on behalf of sustainability. Tyagi, Garg, and Paudel, (2014) opinion that Environmental economics is at the heart of the green discussion, where the environment can no longer be considered as a distinct entity from the economy. The report emphasizes that various forms of environmental deterioration have a wide range of types and repercussions. To address this problem, several studies have been undertaken in both developing and developed nations, using various methodologies to capture health benefits from better environmental quality. According to the paper, reducing exposure to environmental risk factors by improving air quality and increasing access to improved sources of drinking and

bathing water, sanitation, and clean energy is linked to significant health benefits and can help achieve the Millennium Development Goals of environmental sustainability, health, and development. This work also discusses the national and global causes and effects of environmental degradation and social inequality. This study presents a review of the literature on research related to reduced environmental risk, with an emphasis on air pollution reduction, improved water quality, and climate change mitigation.. Chopra (2016) claims that human use of assets such as air, water, and soil has resulted in the disintegration of the Earth or degradation of the ecosystem, environmental damage, and extinction of species. The report discusses some of India's problems, including air pollution, water pollution, waste, and environmental contamination. In India, pollution is both a problem and a potential opportunity. Diseases, health difficulties, and long-term livelihood impacts are ascribed to environmental degradation in India. He identified modern urbanization, industrialization, over-population growth, deforestation, etc., as the major causes of environmental degradation. Further, adverse effects of environmental degradation are enumerated: impact on human health, biodiversity loss, and ozone layer depletion. The primary causes of environmental deterioration in India include population expansion along with economic development, as well as the abuse of natural resources. According to the World Bank, India achieved one of the quickest advancements in the world in addressing environmental concerns and increasing environmental quality between 1995 and 2010. Still, India has a long way to go before it can achieve environmental quality comparable to that of wealthy nations. Moyer (1977) developed an unconstructive environmental attitude instrument to measure the environmental attitude of the students. O'riordan (1981) studied that Environmentalism is an attitude of mind and a certain code of behavior as an ideology. Therefore, the educational challenge is making Environmentalism real, not merely a classroom abstraction. The problems of converting Environmentalism into modern western living are described, as are various remedies, ranging from new approaches to analysis to various forms of activity and association with the surrounding community. Gupta (1986) studied the attitude of teachers towards environmental education, and he found the majority of teachers showed a favorable attitude towards environmental education. Shahnawaj (1990) studied environmental awareness and environmental attitudes of secondary and higher secondary school teachers and students. A comparative study of attitude towards population education and environmental education and family planning of different levels of workers in specific occupations was studied by Singh, (1991). Sinha (1992) examines the role played by education in social and occupational mobility after independence. The major finding of this study was more than 80% of educated persons changed their caste profession, and the shift in the profession had always been upward. Read, A.D. and Pongracz, (2000) studied public education and awareness-raising in the UK and concluded that several techniques had been commonly used in Europe and North America to try to motivate residents to participate in all forms of waste management. Singh (2005) studied the scientific phenomenon between holistic education and

environmental awareness and concluded that environmental. Everything important that has happened to humans since the Paleolithic is due to environmental influences. Throughout history, environmental protection has recurred in diverse forms in different parts of the world. For example, in Europe, King Edward I of England banned the burning of sea coal by proclamation in London in 1272 after its smoke had become a problem (David Urbinato, 1994; Kaur, M.A. And Jayaswal, 2009). The fuel was so common in England that this earliest of names for it was acquired because it could be carted away from some shores by the wheelbarrow. The origins of the environmental movement lay in response to increasing levels of smoke pollution in the atmosphere during the Industrial Revolution. The emergence of great factories and the concomitant immense growth in coal consumption gave rise to an unprecedented level of air pollution in industrial centers; after 1900, the large volume of industrial chemical discharges added to the growing load of untreated human waste (James R. Fleming and Bethany R. Knorr at Colby College, 1995). The Alkali Acts, established in 1863 in the United Kingdom, were the first large-scale, contemporary environmental regulations, regulating the harmful air pollution (gaseous hydrochloric acid) released by the Leblanc process, which is used to make soda ash. To combat the pollution, an Alkali inspector and four sub-inspectors were assigned. The inspectorate's responsibilities grew over time, culminating in the Alkali Order of 1958, which put all big heavy businesses that created smoke, grit, dust, or fumes under regulation. The first wildlife protection regulations were passed in the late nineteenth century. Between 1872 and 1903, biologist Alfred Newton published a series of studies on the feasibility of establishing a 'Close-time' to conserve local creatures. His lobbying for laws to protect animals from shooting during the mating season resulted in the founding of the Royal Society for the Conservation of Birds, which impacted the passing of the Sea Birds Preservation Act in 1869, which was the world's first wildlife protection law (Baeyens & Martínez, 2004). However, for the most of the century, from 1850 to 1950, air pollution control was the dominant environmental factor. The Coal Smoke Abatement Society is one of the earliest environmental non-governmental organizations, having been founded in 1898. It was established by artist Sir William Blake Richmond, who was fed up with coal smoke's gloom. Despite prior laws, the Public Health Act of 1875 mandated that all stoves and fireplaces consume their smoke. It also included penalties for companies emitting huge volumes of black smoke. With the Smoke Abatement Act of 1926, the terms of this statute were expanded to encompass additional pollutants, such as soot, ash, and gritty particles, and to allow local governments to enforce their own laws. However, it was only after the Great Smog of 1952 in London, which nearly brought the city to a halt and may have resulted in upwards of 6,000 deaths, that the Clean Air Act 1956 was implemented, and pollution in the city was eventually eliminated. Households were given financial incentives to replace open coal fires with alternatives (such as installing gas fires) or to burn coke instead (a byproduct of municipal gas production), which creates very little smoke. In certain towns and cities, smoke

control zones were established where only smokeless fuels could be used, and power plants were relocated away from cities. The legislation sparked contemporary environmental activism and prompted a reconsideration of the threats that environmental deterioration poses to people's quality of life. Environmental concepts grew in popularity and awareness during the twentieth century. Efforts to rescue certain species, notably the American Bison, were beginning to be made. The endangerment of the American Bison and the death of the last Passenger Pigeon served to focus environmentalists' thoughts and promote their concerns. President Woodrow Wilson of the United States established the Service in 1916. In 1919, the Forestry Commission was established in the United Kingdom with the goal of increasing the quantity of woods in the country by purchasing land for afforestation and replanting. The Commission was also entrusted with encouraging forestry and commercial timber production. The Commission concentrated its efforts in the 1920s on purchasing property to begin planting new forests; most of the area had previously been utilized for agricultural purposes. By 1939 the Forestry Commission was the largest landowner in Britain (Nail, 2008). During the 1930s, the Nazis had elements that were supportive of animal rights, zoos, and wildlife (Thomas R. DeGregori, 2002). Aldo Leopold's A Sand County Almanac was released in 1949. It articulated Leopold's conviction that humans should treat the environment with moral respect and that harming it is immoral. The book has been dubbed "the most influential book on conservation" on several occasions. Throughout the 1950s, 1960s, 1970s, and beyond, photography was used to raise public awareness about the need of land conservation and to recruit members for environmental groups. The Sierra Club Exhibit Format Series was designed by David Brower, Ansel Adams, and Nancy Newhall to assist boost public environmental consciousness and bring a flood of new members to the Sierra Club and the environmental movement in general. "This Is Dinosaur," edited by Wallace Stegner and featuring photographs by Martin Litton and Philip Hyde, was part of a new kind of activism known as Environmentalism, which combined the conservationist ideas of Thoreau, Leopold, and Muir with hard-hitting advertising, lobbying, book distribution, letter-writing campaigns, and more to prevent the construction of dams within Dinosaur National Monument. The use of photography for conservation, in addition to the written word, stretches back to the formation of Yosemite National Park, when photos persuaded Abraham Lincoln to permanently conserve the spectacular glacier-carved scenery. The Sierra Club Exhibit Format Series helped to organize public opposition to dam construction in the Grand Canyon, as well as conserve a number of other national treasures. The Sierra Club frequently headed a coalition of environmental organizations that included the Wilderness Society and others. After focusing on wilderness preservation in the 1950s and 1960s, the Sierra Club and other environmental organizations expanded their focus to cover concerns such as air and water pollution, population management, and natural resource exploitation.

Global Efforts for protection of the environment

The environmental movement in the West was primarily motivated by a desire to safeguard endangered animal species and natural environments. However, in India, it emerged from the necessity of human survival. This was the poor's environmentalism, which combined social justice concerns with environmental sustainability on the one hand. It asserted that current resource usage practices harmed local populations and wreaked havoc on the ecosystem. When Indira Gandhi came back to power in 1980, she created a Department of Environment at the Centre, which grew into a full-fledged Ministry a few years later. New legislation was passed to limit pollution and conserve natural forests. There was even talk of reinstating local water and forest management systems.

Meanwhile, journalists and academics across India have begun to investigate the impact of environmental deterioration on social life in a more methodical manner. The groundbreaking reporting of Anil Agarwal, Darryl D' Monte, Kalpana Sharma, Usha Rai, Nagesh Hegde, and others was essential in raising public awareness of these issues. Scientists like Madhav Gadgil and A.K.N. Reddy started figuring out how to use forests and energy in a sustainable way. Through a variety of efforts.

The poor's environmentalism began to permeate school and college pedagogy due to these many efforts. The Chipko and Narmada movements were now mentioned in textbooks. Environmental sociology and environmental history were taught in university departments. Specialist journals on these topics were now being printed and read. Finally, environmental consciousness had begun to spread among the middle class.

Many environmentalists believe that human interference with 'nature' should be restricted or minimized as a matter of urgency for the sake of life, the planet, or just for the benefit of the human species (Michael Huesemann, 2011). At the same time, environmental skeptics and anti-environmentalists do not believe there is such a need. One can also regard oneself as an environmentalist and believe that human 'interference' with 'nature' should be increased (Neil Paul Cummins, 2012)

The concern for environmental protection occurred in different parts of the world directly related to the local environmental problems. The two International Conferences on Environment and development- one at Stockholm in 1972 and another at Rio de Janeiro in 1992 have influenced environmental policies in most countries, including India.

Stockholm Conference-1972

UN Conference on Human Environment held in Stockholm in 1972 exerted a major influence on environmental legislation in India. A National Committee on

Environmental Planning and Co-ordination (NCEPC) was set up in the Department of Science And Technology in 1972 to prepare for the conference. The Government of India took several steps to implement the decisions taken at the conference employing amendments to the Constitution, new legislation slating to environment protection, and creating institutions for implementing the legislation.

Rio-de-Janeiro Conference-1992

- The UN Conference on Environment and Development held at Rio in 1992
- 172 Government participated with 116 sending their Heads of State Government. Some 2400 representatives of NGOs attended with 17000 people.

The Issues Addressed Included

- The systematic scrutiny of patterns of production-particularly the production of toxic components such as lead in gasoline or poisonous waste.
- Alternative source of energy to replace the use of fossil fuels, which are linked to global climate change.
- New reliance on public transportation systems to reduce vehicle emissions, congestion in cities and the health problems caused by pollute air and smoke.
- The growing scarcity of water.

The Earth Summit resulted in the following documents

- Rio Declaration on Environment and Development.
- Agenda 21.
- Forest Principles.

Moreover, important legally binding agreements were open for signature.

- Convention on Biological Diversity.
- Framework on climate change (UNFCCC)
- United Nations Convention to Combat Desertification.

Challenges of Environmentalism:

Climate change and Global Warming are the main causes of concern for policymakers. The environment is continuously deteriorating. The greenhouse gases concentration is increasing. Forest contains a substantial part of the

planet's carbon; therefore, current rates of forest loss contribute current rates of forest loss contribution to almost 20 % emission of Carbon dioxide. Glaciers are melting. The precipitation pattern is changing. The ocean level is increasing. The forest productivity is decreasing. The levels of air pollution are now shockingly high in many countries worldwide. The rivers along cities are effectively dead. Groundwater aquifers dipped alarmingly. The untreated waste of many cities worldwide is being dumped on openly. Forests continued to decline and sometimes disappear.

Thus, Environmentalism is the concern for environmental protection and improvement of the environment's health. Environmentalism is devoted to a social movement that seeks to influence education to protect natural resources and ecosystems. But today, the world is an environmental basket-case; marked by polluted skies, dead rivers, falling water tables, ever-increasing amounts of untreated wastes, disappearing forests. Meanwhile, tribal and peasant communities continue to be pushed off their lands through destructive and carelessly conceived projects. A new Chipko movement is waiting to be born. Even though the several governments have taken some steps to protect and conserve the natural resources. A lot needs to be done in the future. So, it could be concluded that the formation of policies to protect the environment is enough, but there is a strict need for the proper implementation of these policies. Therefore, the approach of Environmentalism can be achieved only by the intermingling of active participation of common people, government agencies, policymakers, NGOs, social workers, and the scientific community. Hence, this study is endeavoured to assess the published research on Environmentalism to find out the prevailing trends in the research and determine forthcoming research directions; this study also helps researchers work on the more demanding areas that need to be explored more.

3. Objectives of the research

- What is the trend of publications and citations on Environmentalism between 1941 and 2021?
- Who are the most prolific authors and authorship patterns in environmentalism research?
- Which countries and organizations are the most productive in environmental research?
- Which are the most relevant sources on Environmentalism?
- What are the most frequent authors' keywords and all keywords in the field?
- What are the most important research areas and funding agencies for Environmentalism?
- What are the most cited publications on Environmentalism between 1941 and 2021?
- What is the trend in research collaboration?

4. Methods and Materials

Methods: This study used the bibliometric method to analyze research productivity on Environmentalism. The bibliometric study is a quantitative method used to examine research trends on a particular domain. Bibliographic data of this research was retrieved from the web of science and studied based on bibliometric indicators such as annual research growth, most reverent source, productive country, organization and authors, most important research area, funding agencies, and country collaboration.

Database consulted: The web of Science database was selected to extract data because of its world's most trusted global citation database with the most powerful research engine, offering your library with best-in-class publication and citation data for confident discovery, access, and assessment. It is guided by the legacy of Dr. Eugene Garfield, founder of the world's first citation index. The database covers around 1.9 billion referenced references in over 171 million records, More than 9,000 major academic, business, and government organizations, as well as millions of researchers, to generate high-quality research, gain insights, and make better-informed decisions that influence the future of their institution and research strategy.

Search Query: To retrieve the topic's bibliographic data, the following search query was run in the search box of the web of science.

- TS= ("environmentalism")
- Refined by: [excluding] Document Types: (News Item or Discussion or Reprint or Data Paper) and Languages: (English)
- Timespan: All years. Indexes: SCI-EXPANDED, SSCI, A&HCI, CPCI-S, CPCI-SSH, ESCI, CCR-EXPANDED, IC.

Date of data extraction: The search query was run on the 17th August 2021 at Imam Abdulrahman bin Faisal University, Dammam. A total of 4095 research publications were downloaded.

Inclusion and Exclusion Criteria: The search was limited to English publications related to Article, Review, Proceedings Paper, Editorial Material, Book Review, Book Chapter, Letter, Note, Biographical-Item, Meeting Abstract, and Correction. We did not apply geographical and date filters. We excluded News Item or Discussion or Reprint or Data Paper type of documents. The initial search results in the 4280 documents. After screening, 185 irrelevant records were removed from the analysis. Finally, 4095 publications were considered for the present analysis—the global data covered in the field of Environmentalism in the web of science between 1941 and 2021.

Data Analysis: Data analysis was performed using various tools and software, including MS Excel, VOSviewer, Biblioshiny, and Bibexcel.

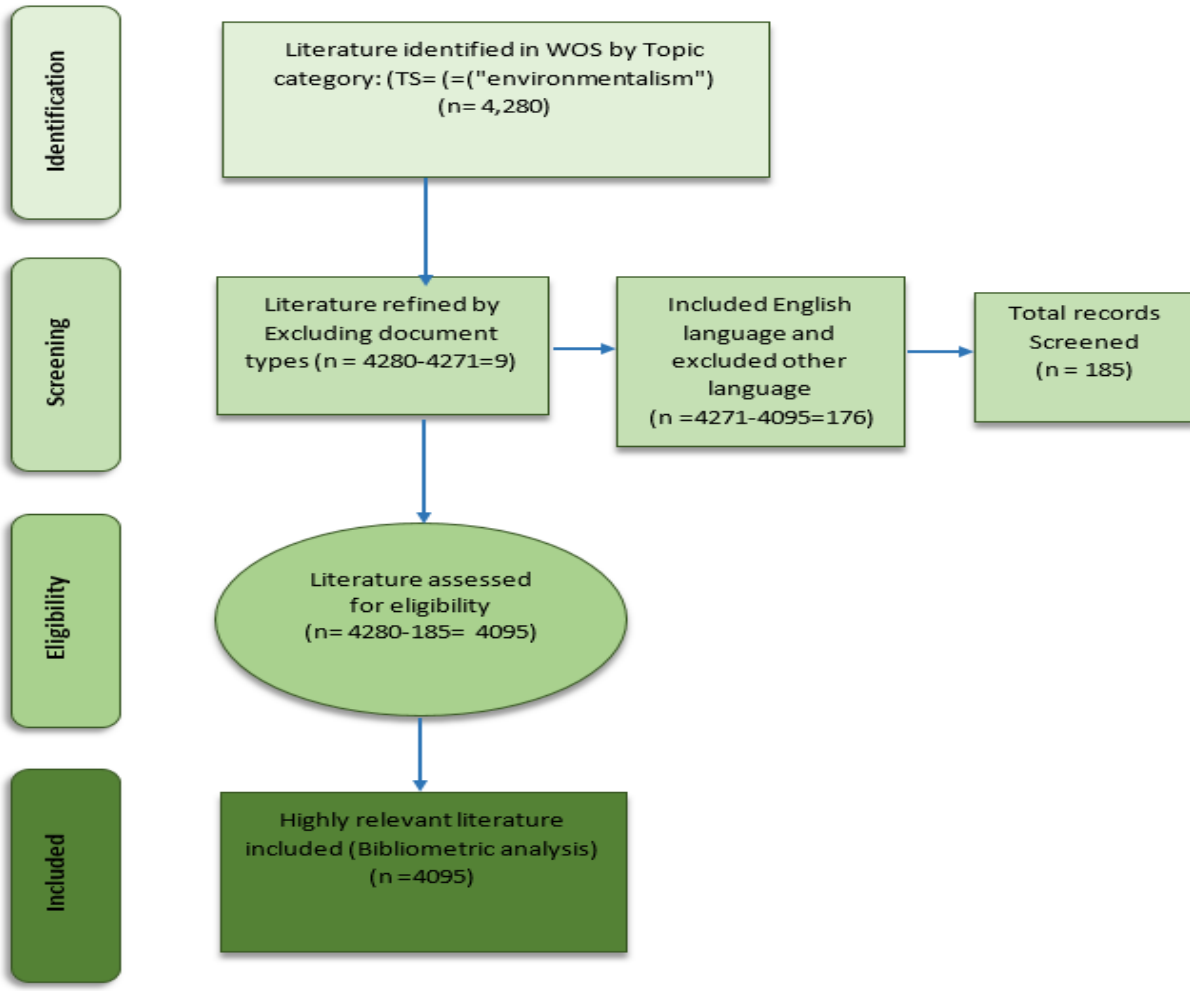


Figure (1): Four phase flow chart of data extraction and filtration process

5. Analysis of Results:

Table (1) shows the primary information of the publications on Environmentalism between 1941 and 2021. The results show that 5307 authors to produce 4095 publications and 73829 citations on Environmentalism have

consulted 133441 references. Researchers published their work on 1567 sources, out of which 1086 were cited sources. Out of 4095 publications, 2611 were cited publications. The table also demonstrates the average citation per document (18.03), single-authored papers (2711), author's keywords (6726), authors per document (1.3), co-authors per documents (1.57), and author collaboration index (2.19).

Table (1): Main information of publications on Environmentalism

Description	**Results**
Timespan	1941:2021
Sources (Journals, Books, etc.)	1567
Total cited source	1086
Total publication	4095
Total cited publication	2611
Total citation	73829
Average citations per document	18.03
References	133441
Keywords Plus (ID)	3060
Author's Keywords (DE)	6736
Authors	5307
Author Appearances	6447
Authors of single-authored documents	2276
Authors of multi-authored documents	3031
Single-authored documents	2711
Documents per Author	0.772
Authors per Document	1.3
Co-Authors per Documents	1.57
Collaboration Index	2.19

5.1. Annual research growth and impact of citation:

Table (2) analyzed the annual growth and the impact of citation trends on Environmentalism between 1941 and 2021. A total of 4095 publications were indexed on the web of science between 1941 and 2021. The first research paper was published in 1941, and surprisingly, it did not receive any citations. The second research paper was reported in 1948 with 21 citations. It was noted that during the first five decades (1941-1991), the yearly research productivity was below 50 publications. Research productivity on Environmentalism has

exponentially increased in the last three decades (1992-2021). 2020 contributed the highest number of research papers on Environmentalism with 295 publications, followed by 2019 with 289 publications, 2018 with 237 publications, and 2017 with 232 publications. The find indicates that research on Environmentalism has grown gradually but gained eminences in the last two decades in total yearly publications. More than 52% of research was produced during 2012-2021, while 48% was produced during 1941-2011.

Out of 4095 publications, 2611 are cited publications. 2018 had the highest number of total cited publications (TCP: 177), followed by 2019 (TCP: 172) and 2016 (TCP: 171).

Figure (2) and table (2) show that 4095 publications received a total of 73829 citations (without self-citation: 69, 281 TC) from 1941 to 2021. The average citation per publication was noted as 18.03. 2000 received the maximum number of citations with 6534 TC for 79 publications, followed by 2010 with 4438 citations for 132 publications, 2012 with 4029 citations for 151 publications, 2011 with 3539 citations for 141 publications, and 2008 with 3474 citations for 95 publications.

The year 2000 also had the highest average citation per publication (TC/TP: 82.71), followed by 1966 (TC/TP: 41) and 2003 (TC/TP: 40.77). Again, 2000 had the highest average citation per cited publication (TC/TCP: 121), followed by 1989 (TC/TCP: 76.5) and 1998 (TC/TCP: 70.88). While 2010 had the highest H-Index (36), 2012 (33), and 2011 and 2014 had the H-index of 30, respectively.

Table (2): Annual growth and structure of citation on Environmentalism between 1941 and 2021

Year	**TP**	**TCP**	**TC**	**TC/TP**	**TC/TCP**	**h-index**
1941	1	0	0	0.00	0	0
1948	1	1	21	21.00	21.00	1
1961	1	0	0	0.00	0.00	0
1963	1	0	0	0.00	0.00	0
1966	1	1	41	41.00	41.00	1
1967	2	1	4	2.00	4.00	1
1970	1	1	1	1.00	1.00	1
1971	4	3	19	4.75	6.33	2
1972	3	2	5	1.67	2.50	1
1973	6	0	0	0.00	0.00	0
1974	1	1	3	3.00	3.00	1
1975	4	1	2	0.50	2.00	1
1976	2	1	9	4.50	9.00	1
1977	5	1	8	1.60	8.00	1
1978	7	4	12	1.71	3.00	2

1979	3	0	0	0.00	0.00	0
1980	13	9	148	11.38	16.44	6
1981	8	5	130	16.25	26.00	4
1982	10	4	38	3.80	9.50	3
1983	11	3	61	5.55	20.33	3
1984	6	3	6	1.00	2.00	2
1985	9	1	1	0.11	1.00	1
1986	11	3	87	7.91	29.00	2
1987	9	3	126	14.00	42.00	1
1988	12	7	70	5.83	10.00	5
1989	13	4	306	23.54	76.50	3
1990	34	12	269	7.91	22.42	4
1991	31	14	257	8.29	18.36	9
1992	65	38	709	10.91	18.66	13
1993	60	37	1618	26.97	43.73	14
1994	71	39	1971	27.76	50.54	15
1995	72	40	1473	20.46	36.83	15
1996	67	32	554	8.27	17.31	13
1997	80	48	2320	29.00	48.33	24
1998	77	41	2906	37.74	70.88	18
1999	69	48	2532	36.70	52.75	21
2000	79	54	6534	82.71	121.00	24
2001	75	49	2352	31.36	48.00	24
2002	89	49	2551	28.66	52.06	23
2003	78	51	3180	40.77	62.35	24
2004	70	46	1464	20.91	31.83	18
2005	85	60	3249	38.22	54.15	23
2006	81	51	1969	24.31	38.61	23
2007	108	63	2170	20.09	34.44	25
2008	135	95	3474	25.73	36.57	29
2009	114	93	3010	26.40	32.37	29
2010	132	99	4438	33.62	44.83	36
2011	141	100	3539	25.10	35.39	30
2012	151	115	4029	26.68	35.03	33
2013	156	110	2269	14.54	20.63	27
2014	179	124	3096	17.30	24.97	30
2015	210	153	2549	12.14	16.66	28
2016	233	171	2783	11.94	16.27	27
2017	232	168	1657	7.14	9.86	20
2018	237	177	1644	6.94	9.29	19
2019	289	172	1316	4.55	7.65	17
2020	295	147	684	2.32	4.65	11
2021	155	56	165	1.06	2.95	5

T.P.:Total Publications, TCP:Total cited publications, T.C.:Total citations, TC/TP:Average citation per publication, TC/TCP: Average citation per cited publications

Figure (2): Analysis of citations between 1941 and 2021

5.2. Form of research on Environmentalism:

Table (3) depicts the type of research conducted by the researcher of Environmentalism between 1941 and 2021. The present study consists of 11 types of research: Article, Review, Proceedings Paper, Editorial Material, Book Review, Book Chapter, Letter, Note, Biographical-Item, Meeting, Abstract, and Correction. It was identified that articles are the most prominent form of research in Environmentalism. More than 66% (TP: 2701) research was published in the form of an article, followed by Book Review with 810 publications and 77 citations, Proceedings paper with 239 publications and 3325 citations, Editorial materials with 132 publications and 561 citations, and Review with 131 and 6226 citations. Among the listed type of research, the bibliographical item was the least preferred type of research with four publications and four citations. Regarding the citation structure on the type of research, articles received maximum number of citations with 62618 TC, followed by a review paper with 6226 citations, proceedings paper with 3325 citations, book chapter with 860 citations, and Editorial material with 561 citations.

Table (3): Types of research on Environmentalism

Rank	Type of research	TP.	TC	Citation sum within h-core	h-index
1	Article	2701	62618	28211	108
2	Book Review	810	77	28	4
3	Proceedings Paper	239	3325	2544	39
4	Editorial Material	132	561	356	11
5	Review	131	6226	5232	36
6	Letter	45	17	12	3
7	Book Chapter	9	860	861	4
8	Note	9	138	134	3
9	Meeting Abstract	9	3	3	1
10	Correction	6	0	0	0
11	Biographical-Item	4	4	3	1

Table (4): Top 20 most relevant source on environmentalism

Rank	Source	JIF	TP	TCP	TC	TC/TP	TC/TCP	h_index	Q	Country
1	Environmental Politics	6.71	114	90	2398	21.04	26.64	25	Q1	England
2	Journal of Business Ethics	4.43	76	26	1206	15.87	46.38	17	Q1	Netherlands
3	Environmental Ethics	0.28	62	37	617	9.95	16.68	12	Q4	USA
4	Environmental Values	2.51	61	40	495	8.11	12.38	12	Q2	Scotland
5	Society & Natural Resources	2.82	56	45	1222	21.82	27.16	19	Q2	USA
6	Organization & Environment	6.11	49	34	1034	21.10	30.41	18	Q1	USA
7	Sustainability	3.25	40	34	151	3.78	4.44	6	Q2	Switzerland
8	Social Science Quarterly	1.17	33	32	1895	57.42	59.22	20	Q3	USA
9	Geoforum	3.9	31	30	950	30.65	31.67	13	Q2	England
10	Journal of Environmental Psychology	5.19	30	25	1659	55.30	66.36	16	Q1	England
11	Environmental History	0.74	29	29	248	8.55	8.55	9	Q4	USA
12	Annals of The Association of American Geographers	3.81	29	21	1096	37.79	52.19	15	Q1	USA

13	Environment and Behavior	6.22	27	25	2210	81.85	88.40	18	Q1	USA
14	Journal of Cleaner Production	9.29	23	21	644	28.00	30.67	12	Q1	USA
15	Ecological Economics	5.38	22	19	623	28.32	32.79	11	Q1	Netherlands
16	Environmental Communication-A Journal of Nature and Culture	2.84	17	17	342	20.12	20.12	9	Q2	England
17	Business Strategy and The Environment	10.3	16	15	518	32.38	34.53	12	Q1	USA
18	Environment and Planning A-Economy and Space	4.04	16	15	433	27.06	28.87	11	Q2	England
19	Global Environmental Change-Human and Policy Dimensions	9.52	15	13	778	51.87	59.85	10	Q1	England
20	Journal of Sustainable Tourism	7.96	13	12	938	72.15	78.17	9	Q1	England

5.3. Relevant source:

Table (4) minutes the most relevant top 20 sources on Environmentalism. The source "Environmental Politics" (JIF=6.71) ranked first with the higher number of publications (TP = 114), as well as the highest number of total citations (2398) indexed in Q1, followed by "Journal of Business ethics" (JIF= 4.43) at second most important sources with 76 publications, total citations 1206 and recorded in Q1 category. "Global Environment Change Human and Policy Dimensions" (JIF= 9.52) is the most impactful journal with 15 publications, total citations 778, and fall in the category of Q1. More than fifty percentage sources in the list fall in the category of Q1 (11), followed by Q2 (6). Most of the listed sources belong from the USA (9), England (7), Netherlands (2), Switzerland and Scotland contributed one journal each.

5.4. Prolific authors:

Table (5) listed the most prolific author analyzed the top 20 most productive authors on Environmentalism. The analysis revealed that the range of publications by the authors occurred 5 to 10. Milfont TL (Victoria University of Wellington, New Zealand) arose as the highly contributed authors with 10 publications, 279 total citations, and h-index (6), followed by Banerjee SB (University of Western Sydney, Australia) with 9 publications, 1594 total citations, and h-index (8), Dietz T (Michigan State University, USA) with 9

publications, highest total citations 3332 and h-index (8). The table also exposes that most of the authors in the list belong from the USA (9 authors) followed by Australia (4 authors), UK (2 authors), and one author belongs from New Zealand, Spain, Cyprus, and the Netherlands each.

Table (5): Top 20 most productive authors on environmentalism

Rank	Authors	TP	TCP	TC	TC/TP	TC/TCP	h_index	Country	Organization
1	Milfont TL	10	10	279	27.90	27.90	6	New Zealand	Victoria University of Wellington
2	Banerjee SB	9	9	1594	177.11	177.11	8	Australia	University of Western Sydney
3	Dietz T	9	9	3332	370.22	370.22	8	USA	Michigan State University
4	Dunlap RE	7	7	865	123.57	123.57	7	USA	Washington State University
5	Kahn ME	7	7	662	94.57	94.57	7	USA	UCLA and NBER
6	Leonidou LC	7	7	457	65.29	65.29	7	Cyprus	University of Cyprus
7	Meyer JM	7	7	59	8.43	8.43	5	USA	Humboldt State University
8	Chen X	6	6	194	32.33	32.33	5	USA	Michigan State University
9	Collado S	6	6	124	20.67	20.67	5	Spain	Universidad de Zaragoza
10	Doherty B	6	6	116	19.33	19.33	5	UK	Keele University
11	Doyle T	6	6	105	17.50	17.50	5	Australia	Curtin University
12	Liu J	6	6	190	31.67	31.67	5	USA	University of Hawai'i
13	Nyberg D	6	6	290	48.33	48.33	6	UK	University of Nottingham,
14	Peterson MN	6	6	177	29.50	29.50	5	USA	University of North Carolina,
15	Tranter B	6	6	74	12.33	12.33	4	Australia	University of Queensland
16	Wright C	6	6	290	48.33	48.33	6	Australia	University of Sydney
17	Brechin SR	5	5	455	91.00	91.00	5	USA	Michigan State University
18	Carlisle JE	5	5	129	25.80	25.80	3	USA	University of Utah
19	Kim S	5	5	70	14.00	14.00	5	Korea	Ajou University
20	Kopnina H	5	5	71	14.20	14.20	4	Netherlands	University of Amsterdam

TP:Total Publications, TCP:Total cited publications, T.C.:Total citations, TC/TP:Average citation per publication, TC/TCP: Average citation per cited publications

5.5. Pattern of authorship on environmentalism publications:

Figure (3) shows the authorship pattern in environmentalism literature during 1941-2020. It was uncovered that the pattern of authorship ranges from single to twenty-eight. This investigation reveals that the single authorship was most dominant than collaboration among the authors. The top four authorship patterns produce maximum research papers. Single authorship produced the highest research i.e., 2711 publications with 34512 citations, two authorship 806 publications with 20336 citations, three authorship 370 with 13819 citations,

and four authorship 131 publications with 3655 citations. Eleven (TC = 39), Thirteen (TC = 1) and twenty-eight (TC = 32) authorship produced only one publication each, respectively.

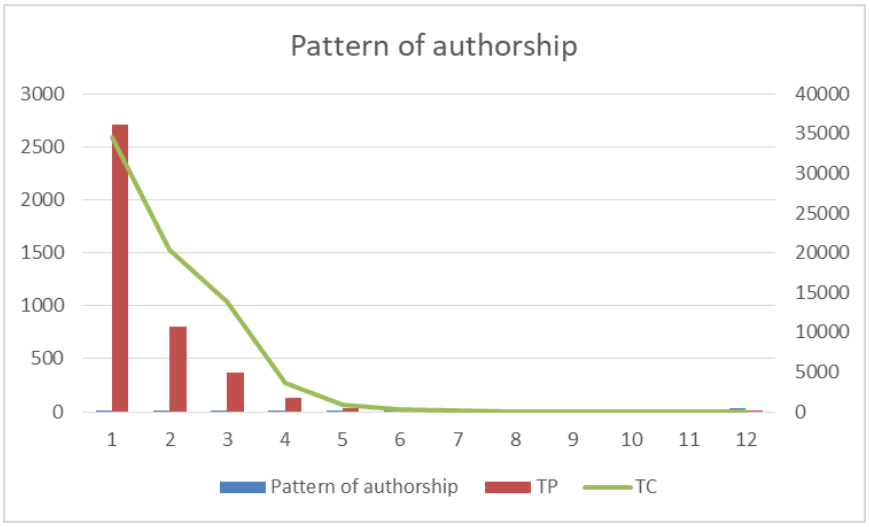


Figure (3): Pattern of authorship

5.6. Bibliographic coupling of countries: Bibliographic coupling selected from "types of analysis" and countries selected from a "unit of analysis"; Counting method: full counting/Fractional counting. Minimum (10) number of documents of a country and minimum (0) number of citations considered for analysis. Of the (95) countries, (40) meet the thresholds. For each of (40) countries, the total strength of the bibliographic coupling links with the other countries will be calculated. The countries with the greatest total link strength will be selected. The number of countries to be selected (20). Full item found (20), cluster (4), links (190), and total link strength (265565).

The selected top 20 countries are grouped in 4 clusters is represented by each color as shown in Figure 4.

Cluster # 1 includes nine countries (England, Peoples R China, Spain, India, France, Turkey, Taiwan, Greece, and Cyprus).

Cluster #2 consists of 6 countries (USA, Australia, Canada, New Zealand, Norway, and Scotland).

Cluster #3 comprises four countries (Germany, Netherlands, Sweden, and Denmark).

Cluster #4 covers only one country, namely South Korea.

Table 6 demonstrates the top 20 most productive countries in environmentalism research from 1941 to 2021. The USA emerged as the top contributed country with 1620 publications and 37875 citations, followed by England with 416 publications and 8099 citations, Australia with 251 publications and 5458

citations, Canada with 241 publications, and 5143 citations, and Peoples R China with 139 publications and 2563 citations. Greece (TP: 17, TC: 383) and Cyprus (TP: 11, TC: 504) were the least productive countries among the top 20 list. As far as the citations, the USA received the highest total citation (37875), followed by England (TC: 8099) and Australia (TC: 5458). The table also reveals that Cyprus received the highest average citation per publication (45.81), followed by the Netherlands (31.03), Spain (28.44), New Zealand (25.34), and Taiwan (23.56).

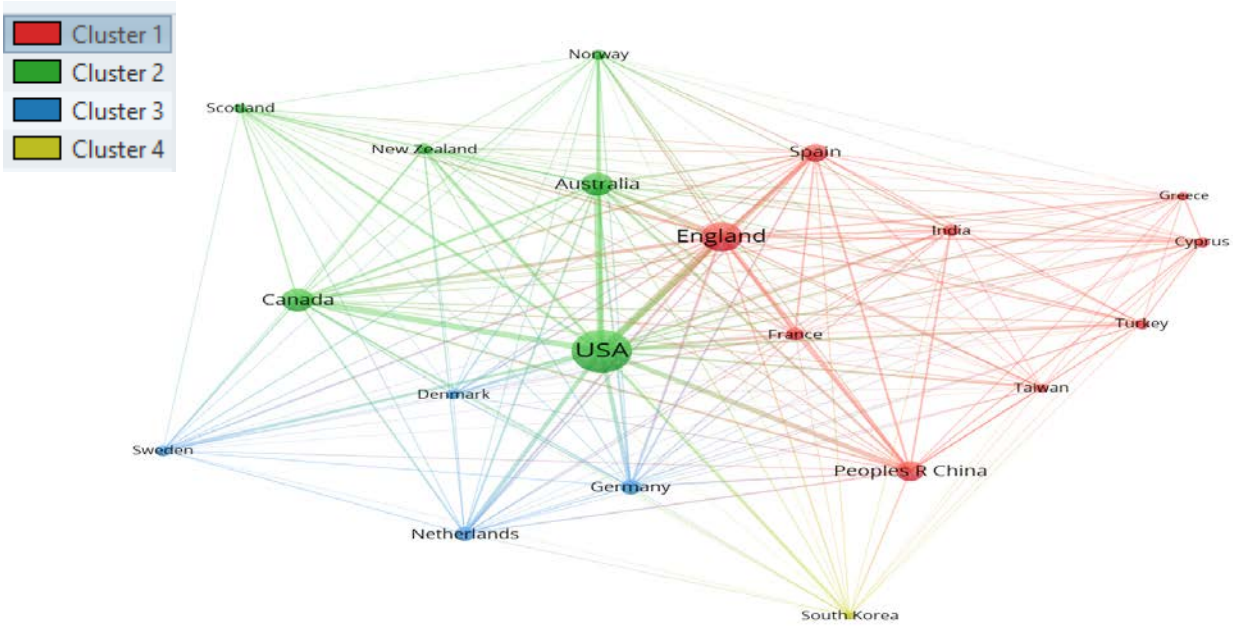


Figure (4): Bibliographic coupling of countries

5.7. Bibliographic coupling of organizations: Bibliographic coupling selected from "types of analysis" and organization selected from a "unit of analysis"; Counting method: full counting/Fractional counting. Minimum (15) number of documents of an organization and minimum (0) number of citations of an organization considered for analysis. Out of the (1908) organization, (45) meet the thresholds. For each of (45) organizations, the total strength of the bibliographic coupling links with the other organizations will be calculated. The organizations with the greatest total link strength will be selected. The number of organizations to be selected (20). Full item found (20), cluster (3), links (190), and total link strength (11565).

The selected top 20 organizations are classified into 3 clusters, and each cluster is represented by each color, as shown in figure 4.

Cluster # 1 consists of the 12 organizations, namely the University of British Columbia, University of Leeds, University of Melbourne, University of Toronto, University of Sydney, University of California Santa Barbara, Ohio State University, University of Manchester, Victoria University Wellington, Australian National University, University of Washington, and the University of Illinois.
Cluster #2 comprises of 7 organizations such as Michigan State University, University of Michigan, University of Oregon, Penn State University, University of Colorado, Washington State University, and University of Minnesota
Cluster #3 includes only one organization that is the University of Florida.

Table (6) analyzed the top 20 most productive organizations, who produced environmentalism research. It was noted that Michigan State University contributed the highest research on Environmentalism with 36 publications and 1951 citations, followed by the University of British Columbia with 28 publications and 1593 citations, University of Michigan, University of Leeds, and the University of Melbourne with 27 publications and 1054, 660 and 303 citations respectively. The University of Minnesota and Illinois were the least productive among the top 20 list, with 15 publications and 429 and 732 citations. Washington State University has the highest average citations per publication with 59.77, followed by the University of British Columbia with 56.89 (TC/TP).

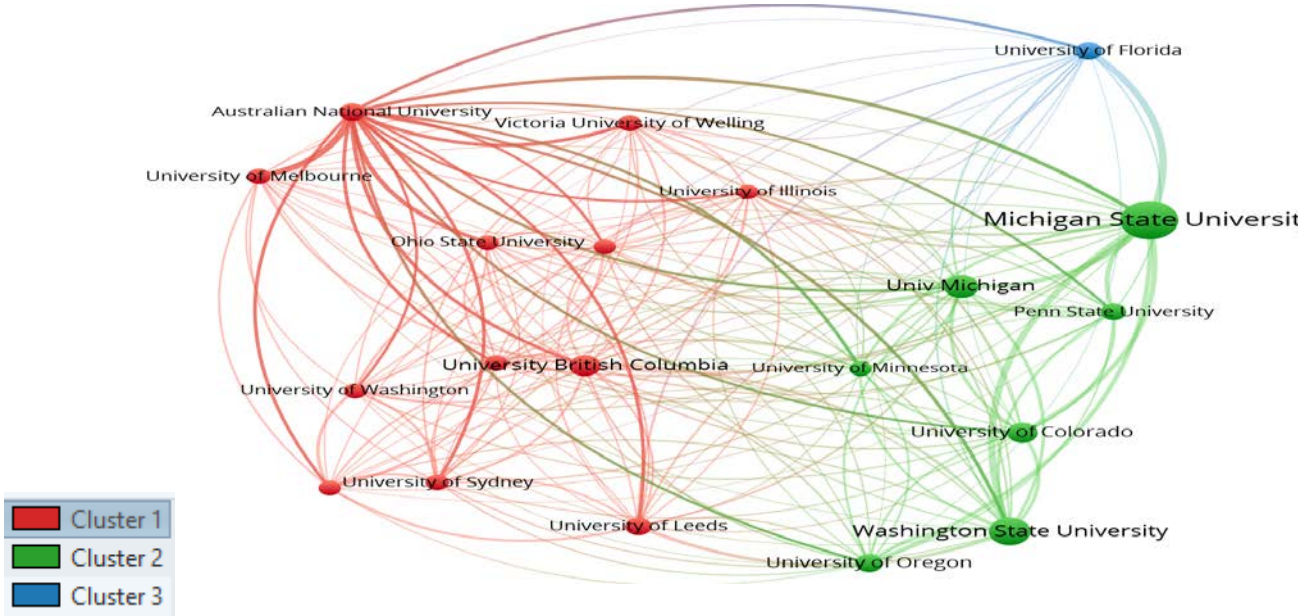


Table (6): Top 20 most productive countries and organizations:

Rank	Country	cluster	TLS	TP	TC	Avg/C	Organization	cluster	TLS	TP	TC	Avg/C
1	USA	2	132377	1620	37875	23.37	Michigan State University	2	3273	36	1951	54.19
2	England	1	70062	416	8099	19.46	University of British Columbia	1	1366	28	1593	56.89
3	Australia	2	44108	251	5458	21.74	University of Leeds	1	1034	27	660	24.44
4	Canada	2	44719	241	5143	21.34	University of Melbourne	1	888	27	303	11.22
5	Peoples R China	1	36043	139	2563	18.43	University of Michigan	2	1549	27	1054	39.03
6	Germany	3	20359	85	1344	15.81	University of Toronto	1	872	25	438	17.52
7	Spain	1	29448	84	2389	28.44	University of Oregon	2	1101	24	976	40.66
8	Netherlands	3	19591	83	2576	31.03	University of Sydney	1	891	24	557	23.2
9	India	1	14145	64	644	10.06	University of California Santa Barbara	1	796	23	438	19.04
10	Sweden	3	12277	61	889	14.57	Ohio State University	1	798	22	366	16.63
11	France	1	16124	58	635	10.94	Penn State University	2	1006	22	1186	53.9
12	New Zealand	2	13572	58	1470	25.34	University of Colorado	2	1269	22	392	17.81
13	Norway	2	11087	57	1020	17.89	University of Manchester	1	846	22	484	22
14	Scotland	2	10677	51	1022	20.03	Washington State University	2	2042	22	1315	59.77
15	Denmark	3	10276	42	860	20.47	Victoria University Wellington	1	851	21	454	21.61
16	South Korea	4	7979	29	430	14.82	Australian National University	1	1060	19	201	10.57
17	Turkey	1	10917	26	299	11.5	University of Florida	3	1077	19	447	23.52
18	Taiwan	1	9267	25	589	23.56	University of Washington	1	822	17	314	18.47
19	Greece	1	7250	17	383	22.52	University of Illinois	1	753	15	732	48.8
20	Cyprus	1	10852	11	504	45.81	University of Minnesota	2	836	15	429	28.6

TLS=Total link strength, TC=Total citations, TP=Total publications, Avg/C=Average citations per publications

5.8. Research Area and Funding agencies:

Table (7) listed the top 20 most productive research areas and funding agencies in Environmentalism. The table discloses that only one research area contributed to more than 1000 publications in Environmentalism. "Environmental Science Ecology" was the most crucial research area in Environmentalism with 1201 (29.328 %) publications, followed by "Business Economy" with 546 (13.333) publications, "Government Law" with 469 (11.453%) publications, "Sociology" with 392 (9.573%), "History" with 382 (9.328%) publications. "Anthropology" and "Literature" contributed equally, with 137 publications each. "Education Educational Research" was the least contributed research area among the top 20 list in Environmentalism with 92 publications.

"UK. Research Innovation" was the most crucial funding agency in Environmentalism with 47 total publications followed by "National Natural Science Foundation of China" with 35 publications, Economic Social Research Council" with 33 publications, "European Commission" with 31 publications. This was followed by "National Science Foundation" with 23 publications, "Social Sciences and Humanities Research of Canada" with 21 publications. Ministry of Science and Technology Taiwan" and "Spanish Government" were the least contributed funding agencies among the top 20 list, producing six publications each.

Table (7): Top 20 most productive research areas and funding agencies on Environmentalism

Rank	**Research Areas**	**TP**	**% of 4095**	**Rank**	**Funding Agencies**	**TP**	**% of 4095**
1	Environmental Sciences Ecology	1201	29.328	1	UK Research Innovation	47	1.148
2	Business Economics	546	13.333	2	National Natural Science Foundation of China	35	0.855
3	Government Law	469	11.453	3	Economic Social Research Council	33	0.806
4	Sociology	392	9.573	4	European Commission	31	0.757
5	History	382	9.328	5	National Science Foundation	23	0.562
6	Social Sciences Other Topics	366	8.938	6	Social Sciences and Humanities Research Council of Canada	21	0.513
7	Geography	349	8.523	7	Australian Research	19	0.464

					Council		
8	Public Administration	236	5.763	8	European Research Council	13	0.317
9	Science Technology other Topics	183	4.469	9	National Institutes of Health, USA	11	0.269
10	Psychology	182	4.444	10	United States Department Of Health Human Services	11	0.269
11	Development Studies	147	3.59	11	Arts Humanities Research Council	10	0.244
12	Anthropology	137	3.346	12	Ministry Of Education Culture Sports Science and Technology Japan	9	0.22
13	Literature	137	3.346	13	Ministry of Education China	8	0.195
14	Religion	135	3.297	14	Portuguese Foundation For Science and Technology	8	0.195
15	Engineering	131	3.199	15	Swedish Research Council	8	0.195
16	Arts Humanities other Topics	112	2.735	16	German Research Foundation	7	0.171
17	Area Studies	104	2.54	17	Japan Society For The Promotion Of Science	7	0.171
18	International Relations	101	2.466	18	Nih Eunice Kennedy Shriver National Institute of Child Health Human Development	7	0.171
19	History Philosophy of Science	94	2.295	19	Ministry of Science and Technology Taiwan	6	0.147
20	Education Educational Research	92	2.247	20	Spanish Government	6	0.147

5.9. Mapping co-occurrence of all keywords: Co-occurrence selected from "types of analysis" and all keywords selected from a "unit of analysis"; Counting method: full counting/Fractional counting. Minimum (30) occurrence of keywords considered for analysis. Out of the (8671) keywords, (84) meet the thresholds. For each of (84) keywords, the total strength of the co-occurrence

links with the other keywords will be calculated. The keywords with the greatest total link strength will be selected. Full item found (84), cluster (4), links (2141), and total link strength (9019).

The selected 84 keywords were grouped in 4 clusters. Each cluster is represented by a particular color, as shown in figure 6.
Cluster # 1 consists of 26 keywords, namely Politics, Climate-Change, Environment, Climate Change, Conservation, Governance, Policy, Sustainable Development, Ecology, China, Science, Biodiversity, Political Ecology, State, Nature, Pollution, Community, Participation, Authoritarian Environmentalism, Neoliberalism, Anthropocene, Environmental Governance, Market Environmentalism, Resistance, Agriculture, and Water.

Cluster # 2 comprises 23 keywords such as attitudes, Values, Behavior, Gender, Knowledge, Environmental Concern, Religion, Global Environmentalism, Scale, Protection, Perspective, Risk, Movement, Perceptions, Environmental Attitudes, United-States, Objective, Problems, Subjective Values, Paradigm, Beliefs, Postmaterialist Values, and Support, Pro-Environmental Behavior.

Cluster #3 includes 18 keywords, specifically Sustainability, Corporate Environmentalism, Management, Green, Performance, Impact, Strategy, Determination, Model, Ethics, Industry, Business, Innovation, Antecedents, Resource-Based View, Corporate Social Responsibility, etc. Competitive Advantage, and Corporate Social-Responsibility.

Cluster #4 covers 17 keywords, explicitly Environmentalism, Activism, Identity, Consumption, Environmental Justice, Culture, Social Movements, Globalization, Justice, Social-Movements, Discourse, Ideology, World, Strategies, Organizations, Health, and Movements.

Figure (6) also reveals that among the 84 all keywords, the top 20 occurred keywords are Environmentalism (N:885), sustainability (N:223), politics (N:202), corporate Environmentalism (N:199), attitudes (N:168), management (N:167), climate-change (N:143), environment (N:128), climate change (N:127), conservation (N:122), values (N:114), governance (N:108), green (N:104), performance (N:104), policy (N:100), sustainable development (N:99), behavior (N:97), ecology (N:95), china (N:84), and gender (N:80).

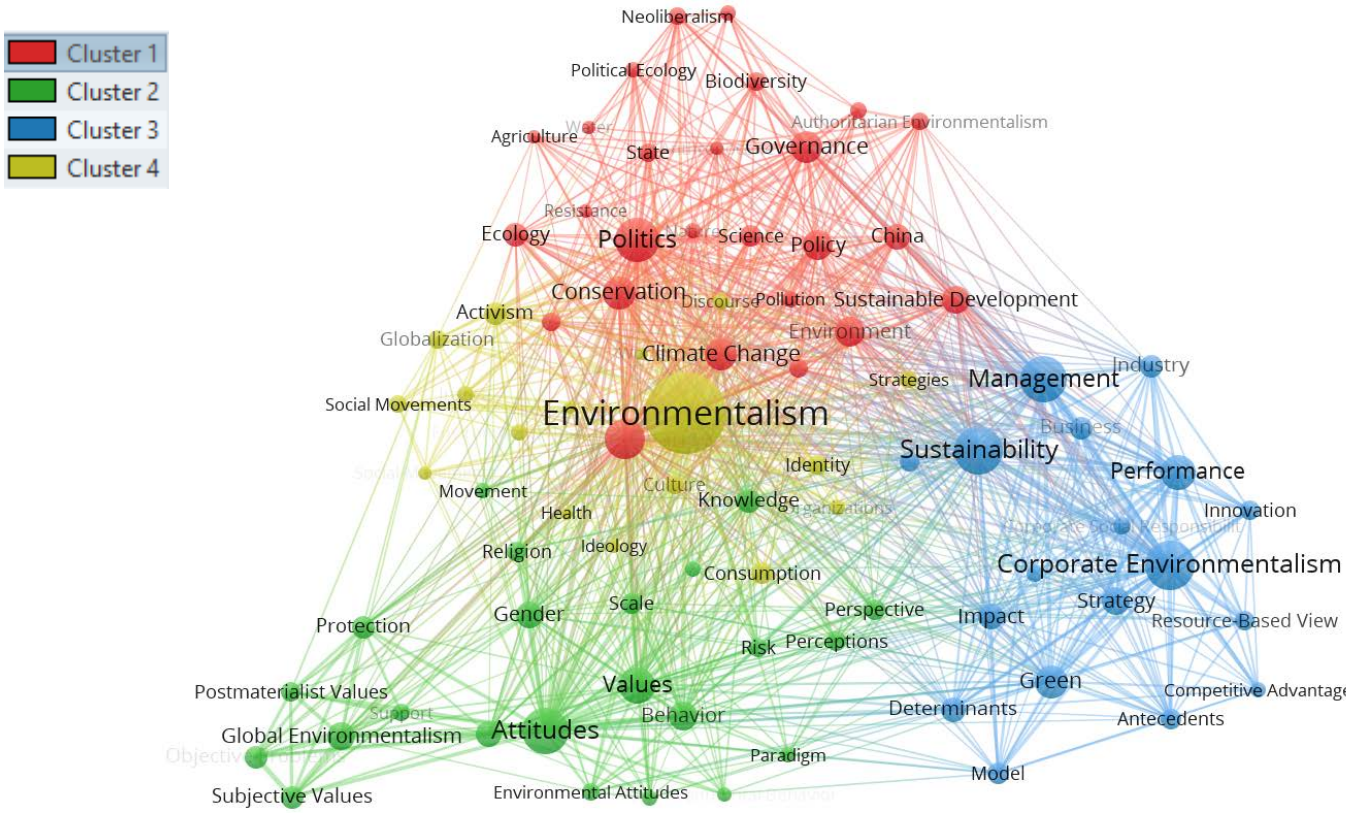


Figure (6): Keyword co-occurrence of minimum 30 occurrences, out of 8671 keywords, 84 meet the criteria.

5.10. Word cloud by author keywords:

Figure (7) demonstrates the top 100 author keywords in environmentalism research publications. A minimum of 11 occurrences of author keywords has been selected to visualize the word clouds. These authors' keywords are Environmentalism, Sustainability, Climate Change, Environment, Environmental, China, Sustainable Development, Ecology, Nature, Conservation, Corporate Environmentalism, Environmental Justice, Social Movements, Development, Activism, Environmental Attitudes, Anthropocene, Political Ecology, Discourse, Green, Environmental Concern, Politics, Religion, Environmental Policy, Environmental Ethics, Social, Corporate Social Responsibility, Neoliberalism, Ecocriticism, Environmental Governance, Ethics, Gender, Identity, Performance, Biodiversity, Environmental Movement, Environmental Orientation, Governance, Pro-Environmental Behavior, Values, Ideology, Ecofeminism, Environmental Management, Australia, Environmental

History, Management, Green Marketing, Market Environmentalism, Pollution, Strategy, Consumption, Environmental Activism, Framing, Policy, Culture, Democracy, Energy, Environmental Politics, Globalization, Materialism, Nationalism, Responsibility, Wilderness, Authoritarian Environmentalism, Brazil, Colonialism, Global, Governmentality, New, Stewardship, Community, Environmental Education, Justice, Political Economy, Anthropocentrism, Attitudes, Corporate, Deep Ecology, Environmental Performance, Environmentalism Of The Poor, Global Warming, India, Landscape, Public Opinion, Scale, Sustainable, Animal Rights, Civic Environmentalism, Civil Society, Feminism, Analysis, Behavior, Christianity, Citizenship, Discourse Analysis, Environmental Behavior, Environmental Values, History, Indigenous and Media. Among the listed 100 author keywords, the top ten most frequent appeared author keywords are Environmentalism (N: 726), sustainability (N: 148), climate change (N: 125), environment (N: 108), environmental (N: 86), china (N: 68), sustainable development (N: 66), ecology (N: 62), nature (N: 57) and conservation (N: 54).

Figure (7): Word Cloud of author keywords through Biblioshiny software

5.11. Most cited publication in Environmentalism:

Table (8) recorded the top 20 most cited research papers in Environmentalism. The table displays that the article entitled "New Environmental Theories: Towards a Coherent Theory of Environmentally Significant Behavior" by Stern PC (2000), J Soc Issues was the most cited publication with 3221 citations (Stern, 2000), followed by "Why Patients Use Alternative Medicine Results of a National Study" by Astin JA (1998), Jama-J Am Med Assoc with 1847 citations(Astin, 1998) , "Institute Evolution and Change: Environmentalism and the US Chemical Industry" by Hoffman AJ (1999), Acad Manage J with 1176

citations(Hoffman, 1999), "Value Orientations, Gender, and Environmental Concern by Stern PC (1993), Environ Behav with 1020 citations (Stern et al., 1993), "The Value Basis of Environmental Concern" by Stern PC (1994), J Soc Issues with 938 citations (Stern & Dietz, 1994).

Table (8): Top 20 most cited research papers on Environmentalism

TC.	Title	Reference	T.C./Year	NTC
3221	New Environmental Theories: Toward a Coherent Theory of Environmentally Significant Behavior(Stern, 2000)	Stern PC (2000), J Soc Issues	146.41	38.94
1847	Why Patients Use Alternative MedicineResults of a National Study(Astin, 1998)	Astin JA (1998), Jama-J Am Med Assoc	76.96	48.94
1176	Institutional Evolution and Change: Environmentalism and the US Chemical Industry(Hoffman, 1999)	Hoffman AJ (1999), Acad Manage J	51.13	32.05
1020	Value Orientations, Gender, and Environmental Concern(Stern et al., 1993)	Stern PC (1993), Environ Behav	35.17	37.82
938	The Value Basis of Environmental Concern(Stern & Dietz, 1994)	Stern PC (1994), J Soc Issues	33.50	33.79
714	New Ways of Thinking about Environmentalism: Elaborating on Gender Differences in Environmentalism(Zelezny et al., 2000)	Zelezny LC, (2000), J Soc Issues-A	32.45	8.63
535	Environmental values(Dietz et al., 2005)	Dietz T, (2005), Annu Rev Environ Resour	31.47	14.00
517	Footprints on the Earth: The Environmental Consequences of Modernity(York et al., 2003)	York R, (2003), Am Sociol Rev	27.21	12.68
506	Corporate Environmentalism: Antecedents and Influence of Industry Type(Banerjee et al., 2003)	Banerjee Sb,(2003), J Mark	26.63	12.41
502	A food regime genealogy(McMichael, 2009)	Mcmichael P, (2009), J Peasant Stud	38.62	19.01
501	Factors influencing the acceptability of energy policies: A test of VBN theory(Steg et al., 2005)	Steg L, (2005), J Environ Psychol	29.47	13.11
492	Enviropreneurial Marketing Strategy: The Emergence of Corporate Environmentalism as Market Strategy(Menon & Menon, 1997)	Menon A, (1997), J Mark	19.68	16.97
447	Is accounting for sustainability actually accounting for sustainability…and how would we know? An exploration of narratives of organizations and the planet (Gray, 2010)	Gray R (2010), Account Organ Soc	37.25	13.30
445	The Nation-State and the Natural Environment over the Twentieth Century(Frank et al., 2000)	Frank DJ (2000), Am Sociol Rev	20.23	5.38
397	The organization of denial: Conservative think tanks and environmental scepticism(Jacques et al., 2008)	Jacques PJ (2008) , Environ Polit	28.36	15.43
376	Neoliberalizing Nature? Market Environmentalism in Water Supply in England	Bakker K (2005), Ann Assoc Am	22.12	9.84

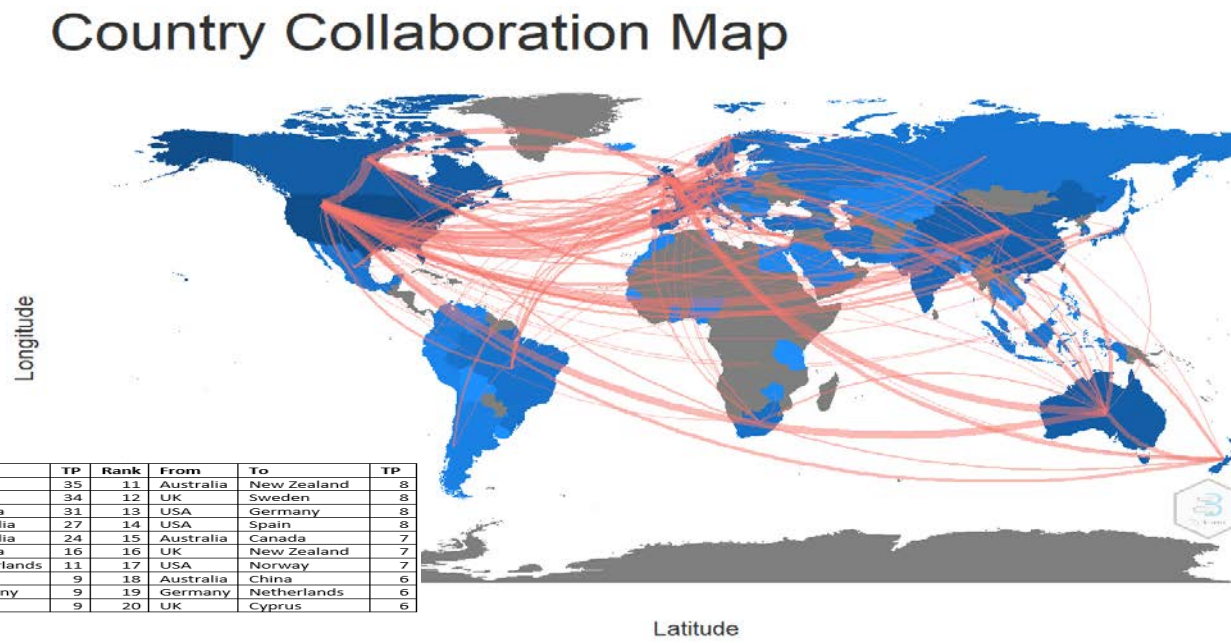
	and Wales(Bakker, 2005)	Geogr		
373	A Conceptual Genealogy of Fragmentation Research: From Island Biogeography to Landscape Ecology(Haila, 2002)	Haila Y (2002), Ecol Appl	18.65	13.01
356	Green purchasing practices of US firms(Min & Galle, 2001)	Min H (2001), Int J Oper Prod Manage	16.95	11.35
347	Self-Regulation and Social Welfare: The Political Economy of Corporate Environmentalism(Maxwell et al., 2000)	Maxwell JW (2000), J Law Econ	15.77	4.20
342	Accumulation by Decarbonization and the Governance of Carbon Offsets(Bumpus & Liverman, 2008)	Bumpus AG (2008), Econ Geogr	24.43	13.29

This was tailed by "New Ways of Thinking about Environmentalism: Elaborating on Gender Differences in Environmentalism" by Zelezny LC (2000), J Soc Issues-A with 714 citations (Zelezny et al., 2000), Environmental Values" by Dietz T (2005), Annu Rev Environ Resour with 535 citations (Dietz et al., 2005), and "Footprints on the Earth: The Environmental Consequences of Modernity" by York R (2003), Am Social Rev with 517 citations (York et al., 2003).

The article entitled "Accumulation by Decarbonisation and the Governance of Carbon Offsets" by Bumpus AG (2008), Econ Geogr, was the least cited publication with 342 citations among the top 20 list (Bumpus & Liverman, 2008). The publication entitles "New Environmental Theories: Towards a Coherent Theory of Environmentally Significant Behavior" by Stern PC (2000), J Soc Issues were the highest citation per year (146.41) (Stern, 2000) and the publication "Why Patients Use Alternative Medicine Results of a National Study" (Astin, 1998)by Astin JA (1998), Jama-J Am Med Assoc has the highest normalized total citations (48.94).

5.12. Country collaboration:

Figure (8) analyzed the top 20 international collaborations in producing research on Environmentalism between 1941 and 2021. Among the top 20 collaborated countries, the collaborated publications range from 6 to 35 publications. It was explored that the USA and China contributed the maximum number of collaborative research publications on the topic with 35 publications, followed by the USA and UK with 34 publications, the USA and Canada with 31 publications, and the USA and Australia with 27 publications. The UK and Australia followed this with 24 publications. Among the top 20 listed countries, Australia with China, Germany with the Netherlands, and the UK with Cyprus contributed least to the list with six publications each. The figure also reveals that the UK collaborated with nine countries in the top 20 list, followed by the USA with seven countries, and Australia with three countries.



Rank	From	To	TP	Rank	From	To	TP
1	USA	China	35	11	Australia	New Zealand	8
2	USA	UK	34	12	UK	Sweden	8
3	USA	Canada	31	13	USA	Germany	8
4	USA	Australia	27	14	USA	Spain	8
5	UK	Australia	24	15	Australia	Canada	7
6	UK	Canada	16	16	UK	New Zealand	7
7	UK	Netherlands	11	17	USA	Norway	7
8	UK	China	9	18	Australia	China	6
9	UK	Germany	9	19	Germany	Netherlands	6
10	UK	Spain	9	20	UK	Cyprus	6

Figure (8): Top 20 country collaboration

Discussion

As per the present study's analysis, it is clear that web of science index 4095 total publications in Environmentalism between 1941 and 2021. The highest number of publications was reported in 2020, with 295 publications and 654 citations. In 2000, there was a surge in citations, with 6534 citations producing only 79 publications. It was noted that more 50% reported during the last one decade and 50% research during seven decades (1941-2012). It was clear from the analysis that there is increasing research trends on environmentalism publications. This finding are similar with those of (Al attas et al., 2021; Rahaman, Ansari, et al., 2021; Rahaman, Kumar, et al., 2021; Rahaman & Ansari, 2022), which reported significant growth of literature in terms of total number of publications. In terms of citation growth, there was fluctuation over the year and the recent year received limited citations as comparted to the earlier, as it obvious that recent year publication needs times to get meaningful citation. It was identified that the articles are the most prominent form of research in Environmentalism, with 2701 total publications and 62618 citations. This is because that the environmentalist preferred to publish their work in the form of original research as compared to others forms such as conference papers, review papers, editorial etc. The source "Environmental Politics" (JIF = 6.71) ranked first, with the highest number of publications (TP = 114) and total citations (2398). This is because that Environmental politics (EP) is peer-review journals published by Taylor and Francis with fast review process (76 days avg.

from submission to first decision), moreover there is no article processing charge (APC) for this journal (John M. Meyer, 2022). "Global Environmental Change- Human and Policy Dimensions" (JIF = 9.52) was the most impactful journal in terms of average citation per publication (TC/TP=51.87), with 15 publications and 778 citations (Clarivate Analytics, 2021). With 2711 (66.20%) publications and 34512 citations, a single authorship pattern performed the most research, which shows, researchers prefer to produce research alone in the field. "Milfont TL" (Victoria University of Wellington, New Zealand) emerged as the highest contributed author with 10 publications, 279 citations, and an h_index 6. "Banerjee SB" (University of Western Sydney, Australia) and "Dietz" T (Michigan State University, USA) were the second contributed authors with 9 publications each, 1594 and 3332 citations respectively, and both have highest h_index 8. The analysis shows that most of the researcher in the field belongs from developed countries. This is might be possible reason that they might got research support in terms of fund to contribute in the fields. 'USA' emerged as the highest producing country with 1620 publications. The other most important country in the fields are: England, Australia, Canada and China. Michigan State University (TP = 36) emerged as the top producing organization in Environmentalism with 1951 citations. Other highly active organization in environmentalism research are University of British Columbia, University of Michigan, and University of Leeds. It was clear from the analysis that top 4 productive organization belongs from the USA, Canada and UK. The most significant author's keywords were "environmentalism," "sustainability," "climate change," "environment," and "environmental." The article entitled "New Environmental Theories: Toward a coherent Theory of Environmentally Significant Behaviour" by Stern PC (2000), J Soc Issues, was the most cited publication with 3221 citations. It found that the "UK Research Innovation" is the most crucial funding agency in Environmentalism with 47 total publications. "Environmental Sciences Ecology" is the most important research area in Environmentalism with 1201 (29.328%) publications. Rendering to the analysis, it was explored that the USA and China contributed the maximum numbers of collaborative research publications on the topic with 35 publications.

Conclusion:

In this research paper, we mapped up to date the literature in environmentalism research and its citation impact between 1941 and 2021 using bibliometrics methods. Network analysis was conducted using VOSviewer to analyze authors' keywords, the cited authors' co-citation, sources and references, countries' coupling, and organizations. The result of the study reveals that literature in Environmentalism has increased manifold for the last eight decades. For the first time, environmentalism literature appeared on the Web of Science in 1941 and 2020 and has been recorded as the largest contributed year. The USA was a leading country in Environmentalism publication, and the "Michigan State University" was a highly productive organization. Four thousand ninety-five

publications appeared in 1086 sources, and the "journal Environmental Politics" was one of the most relevant sources in environmentalism research. This study is one of the first to use bibliometric analysis to obtain insight into the environmentalism realm, and its findings complement current research in the field. The study's bibliometric outcomes show that Environmentalism is a well-known field with significant future research potential for environmentalists, health professionals, and several governmental and non-governmental organizations. Lastly, this study is based on high-quality literature indexed on the Web of Science. However, the inclusion of other bibliographic databases, such as Scopus, PubMed, and Google Scholar, may have a certain degree of influence on the study's findings.

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