yönetim ve ekonomi araştırmaları dergisi
journal of management and economics research

Cilt/Volume: 21 Sayı/Issue: 1 Mart/March 2023 ss. /pp. 1-24
A. A. Çelik http://dx.doi.org/10.11611/yead.1101612

PARADIGM SHIFT FOR THE CONSUMERS ON THE EDGE OF THE ENVIRONMENTAL CRISIS: BIBLIOMETRIC ANALYSIS OF NEW ENVIRONMENTAL PARADIGM *

Asst. Prof. Asiye Ayben ÇELİK (Ph.D.) *

ABSTRACT

In the era of Anthropocene, with Dominant Social Paradigm the humankind has intruded nature with a greed to dominate and possess more. Adoption of consumer/consumption-oriented economy models caused pollution, climate change, and damage to the environment. In 1978 New Environmental Paradigm was introduced to exclaim the need for a new worldview to increase the awareness and support of mankind in favor of nature. It's been adopted by several disciplines and used in the environmental behavior literature to assess the environmental concern/attitudes. Since attitudes shapes the behavior, and the pro-environmental behavior has a transformative power on the sustainability and the survival of the nature, its determinants were analyzed through several theories. With this study, it's aimed to focus on New Environmental Paradigm and reveal its dominance in environmental behavior literature with a bibliometric analysis demonstrating the most productive and influential studies, authors, universities and countries to shed light for researchers.

Keywords: *New Environmental Paradigm, Environmental Attitudes, Bibliometric Analysis.*

Jel Codes: *M30, M31, Q50.*

1. INTRODUCTION

The world has been experiencing a tough change globally, and every planet citizen will suffer from the climate change as well as from the detriments in natural resources. Some of them will be obliged to immigrate to find a better place to live, while some others will adapt themselves to live with limited resources under compelling circumstances. All these situations are the consequences of humankind's anthropocentric attitude towards nature. This attitude, which was mostly shaped by the power of technology, enabled human beings to dominate the nature. The facilitator role of technology in the emergence of new innovations to make the life easier or to prove the power of one nation on another, also lead the humankind to consider themselves as "superior to nature". But the reality, which is proven by the natural disasters, is not like that. Increasing carbon emissions with the pressure of consumption economy, the formulation of welfare based on the capacity and capability of production and consumption, and limited involvement in effective waste management accelerate the negative

* This paper is derived from the doctoral dissertation written by Asiye Ayben Çelik under the consultancy of Prof. İkbal AKSULU in 2012 at Dokuz Eylül University and enriched with a bibliometric analysis performed.

* Manisa Celal Bayar University, Faculty of Business, Business Department, Manisa/ Türkiye. E-mail: ayben.celik@cbu.edu.tr

Makale Geçmişi/Article History

Başvuru Tarihi / Date of Application : 11 Nisan / April 2022
Düzeltme Tarihi / Revision Date : 10 Şubat / February 2023
Kabul Tarihi / Acceptance Date : 01 Mart / March 2023

Araştırma Makalesi/Research Article

effects on the nature. So, it is obvious that there is an urgent need for a behavioral change for a sustainable future.

On macro level, governments have sparked that change by applauding the adoption of "sustainable development model" which was introduced in the Bruntdland Report (Our Common Future) of the UN World Commission on Environment and Development in 1987. This was the first "global agenda for change" proposing long-term environmental strategies and economic development catering the needs of the present and future generations without trading off from one another (UN, 1987). Since then, several summits and conferences were held to shape the future of the planet. Lately *2030 Sustainable Development Goals* with 17 goals and 169 targets were adopted by the UN's member states as "*a shared blueprint for peace and prosperity for people and the planet, now and into the future"* (UN, n.d.a). Those goals have been adopted as a tool for transformation of both the governments and the businesses, and even for individuals.[1]

On micro level, each of the planet citizens as a member of the 8 billion world population, needs a transformation to save the future of planet and generations. This transformation can be accomplished by acting for the nature's sake with pro-environmental behavior. Academicians have been studying on this issue to discover the drivers of pro-environmental behavior by developing theories like Ajzen and Fishbein's Theory of Reasoned Action, Ajzen's Theory of Planned Behavior, Schwartz's Norm-Activation Theory, Stern's Value-Belief-Norm Theory. Many researchers investigated this subject in several research (See, e.g. Kollmuss and Agyeman, 2002; Nordlund ve Garvill, 2002, 2003; Heimlich and Ardoin, 2008; Steg and Vlek, 2009; Ibtissem, 2010; Klöckner, 2013; Gifford and Nilsson, 2014; Chen, 2015; Ay, 2017; Hartmann et al., 2018; Yakut, 2021). The studies exhibit that environmental attitude play an important role as a driver in the emergence of environmental behavior. So, the focus of this study is the paradigms influencing the environmental attitudes and the future of the planet: Dominant Social Paradigm (DSP) and New Environmental Paradigm (NEP). But mostly the NEP is at the heart of the study.

The purpose of the study is to shed light to New Environmental Paradigm and how it has been progressed in the academic research conducted in social sciences. Therefore, bibliometric analysis was performed in order to figure out the answers to research questions about how NEP is progressed in the academic research, which disciplines apply NEP in their fields, what are the most productive and influential authors, publications, countries, universities and core sources. With this study, it is also aimed to make contribution to the literature by introducing New Environmental Paradigm with the idea in the background and the adoption of it as a measurement tool in different disciplines to measure environmental attitudes/concerns/worldviews.

[1] See UN (n.d.b) "Take Action – The Lazy person's Guide to Saving the World", and SDG 12 Responsible Production and Consumption.

2. LITERATURE REVIEW

An individual's environmental values and attitudes will influence how they perceive their environment, which will ultimately determine their behaviors. In this respect, with the emergence of environmental problems in the world, this issue has started to occupy the agenda not only in the fields of social and natural sciences, but also in philosophy. As a result, the concept of "ecological ethics / environmental ethics" has taken its place in philosophy. "Does nature have a mere value? Or is it as valuable as it is for human beings? Does nature have a pure purpose and purpose in itself or is it only a means to satisfy human needs?" are the main questions to be answered (Cantzen, 2000: 245). The answers to these questions shed light on people's approach to the environment, and environmental attitudes have been shaped by these approaches.

While discovering the root causes of the environmental problems, the way people perceive nature will be decisive. Before the environmental problems reached that level, which would deeply affect the common destiny of humanity, the mechanistic paradigm was dominant in people's views regarding nature. Since the seventeenth century, science had undergone an evolutionary process, both experimental and analytical, and moved away from its position as the defender of medieval theology in an effort to establish a link between natural events and God (Güngörmez, 2006). In the words of Fritjof Capra (1989), an organic, living and spiritual universe design in the Middle Ages left its place to a machine-like worldview (Güngörmez, 2006). In this process, Copernicus, Galileo and Newton had significant roles in terms of physics and astronomy, while Descartes stepped ahead with his mathematical description of nature, and Francis Bacon laid the foundations of experimental science, thus, changing the course of scientific history. For Descartes, "the world is a machine, nature operates according to mechanical laws, and everything in the material world can be explained in terms of the arrangement and movement of its parts" (Capra, 1989 from Güngörmez, 2006: 25). This mechanical description of nature became the Dominant Paradigm in science in the period following Descartes; Newton, on the other hand, carried out a complete mathematical formulation of the mechanistic understanding of nature, and thus was able to make a synthesis of the work of Copernicus and Kepler, Bacon, Galileo and Descartes (Capra, 1989 from Güngörmez, 2006: 25). With Bacon, objectives of the scientists related to science, such as human happiness, wisdom, and learning to live in harmony with nature changed. The aim of science changed to dominate the world, to control it; to evaluate nature as a slave and obligated to serve (Güngörmez, 2006: 23-25).

Actually, the mentality of the humankind which positions itself at the center of everything and the source of all values, in other words anthropocentric attitude, has underpinned the environmental problems, and furthermore the ecological crisis we have been experiencing. From this point of view, it is clear that the starting point of the solution is the need for a holistic approach change in the way people perceive nature. Instead of a man described as the owner and master of nature as Bacon expresses, an understanding describing the human as a part of nature, living with harmony with nature without

domination is needed. So, a paradigm shift is required from Dominant Social Paradigm to a pro-environmental paradigm where the humankind is not superior to nature but knows how live in harmony with it. As the Dominant Social Paradigm instills the belief that the more consumption will bring the more satisfaction and happiness, it triggers hyper-consumption (Baudrillard, 1998). In order to meet this demand, expanding production capacity for economic growth, and pumping up the consumption accelerate the damages to nature (Kilbourne et al. 1997). The DSP embodies the predominant values and beliefs that promote a free-market economy, advances in science and technology, and continuous growth and development, all of which have been cited as a key contributor to the increasingly obvious environmental issues (Xiao and Buhrmann, 2022). Under these circumstances, Dunlap and Van Liere put forward the New Environmental Paradigm as an opposite view to the Dominant Social Paradigm, developed by Pirages and Ehrlich in 1974, envisaging the control of nature through technology for the development of humanity and unlimited growth (Dunlap, 2008: 5).

According to the Dominant Social Paradigm (DSP), there has been a belief in the society about the unlimited availability of resources, continuous improvement, and the necessity of development; the capabilities of science and technology should be trusted in solving environmental problems; there has been a strong emotional connection to laissez faire economics, liberalism, and the sanctity of private property rights (Albrecht et al., 1982). This approach is an indication of the industrial society's attitude that considers human is superior to both nature and other living beings. However, increasing environmental sensitivity has brought about the transition from DSP to NEP. The foundations of the NEP worldview can be listed as follows: "(1) Valuing nature highly, (2) Feeling responsible for other people, species, and future generations, (3) Acting in a way that avoids endangering humanity and nature, (4) Accepting that the limits for growth and people must act accordingly. (5) The new society of cooperation, openness, and participation, (6) The new consultative and participatory policy emphasizing planning and foresight" (Milbrath, 1984). Roberts and Bacon (1997) summarized the assumptions on which NEP is based as follows: (1) Humans are part of nature, (2) There are limits to what the ecosystem can handle, (3) Technological developments have the possibility to solve environmental problems.

A paradigm shift from DSP to NEP is a necessity to start the recovery process for the world. Without this shift, a human-centered approach will still be at the center of activities to protect the environment. Indeed, Arne Naess, who expressed this paradigm shift in his "Deep Ecology" approach, made a dual distinction as shallow and deep ecology[2] (İmga, 2006: 85-88):

- *Shallow ecology* is a movement that tackles resource depletion and pollution with a primary focus on the health and welfare of the people in industrialized nations. With its anthropocentric worldview, this movement failed in the struggle against the institutionalized worldview in advanced industrial societies. This view sees that the source of all values is human and legitimizes the use and

[2] For further information see Tuncay Önder, (2003) "Ekoloji, Toplum ve Siyaset", Ankara: Odak Yayınevi.

manipulation of nature for the satisfaction of human desires, so that nature is viewed as an inanimate entity, and it is approached instrumentally, without attributing a value to nature.

- *Deep ecology*, on the other hand, firmly rejects the anthropocentric dualism that separates man and nature; and accepts man and nature as a whole. Nature is a web of interdependent and interconnected phenomena, and man is just one of the threads of the web of life. It needs a new perspective on man being not separate from nature and above it, but within it. The Gaia Hypothesis[3] met this perspective. Focusing its attention on individual consciousness change, and that approach bears the expectation that this change will bring social change as well.

In terms of paradigm shift, there is another paradigm that can be positioned between shallow ecology and deep ecology at the other extreme, which is the New Ecological Paradigm developed by Dunlap and Van Liere (1978). This paradigm, which associates the environmental problems of the society with the dominant social paradigm of this society, opposes the unlimited exploitation of nature and other living things for the welfare and happiness of human beings. The four main features of this paradigm can be summarized as follows (Tuna, 2007: 192):

1. According to the New Ecological Paradigm, humans are privileged, however, humans must be seen as one of many interdependent creatures.

2. While it is accepted that human relations are heavily influenced by social and cultural forces, the New Ecological Paradigm highlights that human social life is also affected by the biological and physical environment.

3. The worldview, considering the humankind as superior, ignores the biological and physical framework of human action and emphasizes the defining feature of the socio-cultural environment; The New Ecological Paradigm draws attention to the importance of the biological and physical environment influencing human actions.

4. The worldview considering humans as superior, expresses the limitlessness of the continuation of development. On the other hand, the New Ecological Paradigm; no matter how inventive human beings may be, their science and technology cannot exceed ecological principles such as the laws of thermodynamics; hence there are limits to the growth of human societies.

It seems that the New Ecological Paradigm extends from a human-centered understanding of nature to a perspective that focuses on nature.

When we look at the literature, the approaches regarding the perception of the relationship between humans and nature can be summarized as follows (Ertan, 1998: 11-13):

[3] The Gaia Hypothesis, developed by James Lovelock (1979), sees the earth as a single living organism with all living beings together interdependent on the planet, human and non-human, and the elements of this organism need each other to live.

- ***Anthropocentric approach***, basing the basic functions of living and non-living things on humans; recognizes that plant and animal communities are valuable because they are beneficial to humans. This approach, which dates to the Renaissance and took its final shape with the industrial revolution, sees nature as an open source for human use. It is based on the fact that man sees himself as the "master of nature" and emphasizes that ethical principles can only be valid for people, and that human needs and interests have the highest and even special value and importance (Karakoç, 2004:63). In this approach, which symbolizes a selfish attitude in the form of a human being, all beings other than humans are valuable to the extent of the importance that humans ascribe to them.

- ***Biocentric approach*** has developed in the focus of the right to life of plant and animal communities as well as humans. It sees man not as superior to nature, but as a part of nature. Aldo Leopold, who was one of the first to apply ecological findings to environmental ethics, stated in his article titled Environmental Ethics in his book 'A Sand County Almanac' that "people should abandon their habitual environmental occupation and see themselves as members of the environment along with other creatures". In the concept of earth ethics developed by Leopold, the individual was seen as a part of a community consisting of independent parts and expanding its borders to include lands, waters, plants, and animals. Paul Taylor, with his "ethics of respect for nature" and the acceptance that every living thing is a "life center", argues that each one has an essential value. He argues that respecting animal and plant rights in a society has the same importance as respecting human rights, and that humans are equal with other living things (Karakoç, 2004: 66).

- ***Ecocentric approach*** argues that all life forms in the ecosystem have equal rights, including the inanimate objects excluded by the animate-centered approach. There is no priority or privilege of human in these rights. From this point of view, the ecocentric approach is an ideological opposition to the anthropocentric approach that considers itself superior to all other beings and sees the privilege of using nature as an unlimited resource. In addition, as the only ethical practitioner in the world, humans are held ethically responsible for the protection of nature.

These above-mentioned approaches have shaped environmental attitudes that were thought to be effective in predicting environmentally sensitive behavior. In studies investigating the attitude-behavior relationship on environmental issues in the literature, although the relationship was below the expected level, the environmental attitudes of individuals were accepted as the most important indicator of environmentally sensitive behaviors compared to many variables (Stern, et al. 1995; Bamberg and Möser, 2007). For this reason, the measurement of environmental attitudes and behaviors of consumers has been the main subject of many studies as an important indicator of environmentally friendly purchasing (Shrum et al.,1995; Schlegelmich et al., 1996; Çabuk and Nakiboğlu, 2003; Fraj and Martinez, 2007) or pro-environmental behaviors such as recycling, energy conservation, low-carbon consumption behavior, climate change mitigation behavior (Vining and Ebreo, 1992; Ibtissem, 2010; Xu, et al., 2021). According to the findings of Pooley and O'Connor (2000), in which they questioned

the effect of environmental education on developing environmentally sensitive behavior from various perspectives, they underlined that environmental education should focus on changing environmental attitudes, feelings and beliefs, as well as providing information to the recipient.

The interest in environmental attitudes has not only manifested itself in developed countries, but also in developing countries and transition economies, with the sensitivity developed by consumers as a result of environmental damage. In this regard, studies have been conducted to measure the environmental attitudes/concerns of consumers in many countries such as China, South Korea, Mexico, Eastern Bloc countries, Turkey and Greece (such as Corral-Verdugo and Armendáriz, 2000; Bostrom, et al. 2006; Chan, 2001; Ay and Ecevit, 2005, Ntanos, et al., 2019; Gareiou and Zervas, 2021).

NEP Scale

Although various scales ("*Ecocentric, Anthropocentric, and Environmental Apathy Scale*" by Thompson and Barton, "*Ecological Worldview Scale*" by Blaikie, "*ENV Scale*" by Bogner and Wiseman "*Milfont and Duckitt Scale*" by Milfont and Duckitt (Balador, et al., 2021)) have been used in the measurement of environmental attitudes/concerns, the most widely used scale has been the New Ecological Paradigm scale developed by Dunlap and Van Liere (1978) and later revised by Dunlap and his colleagues (2000) (Hawcroft and Milfont, 2010). With this scale, which was developed by Dunlap and his colleagues in the 1970s, the general attitude of human beings towards the environment and the relationship between humans and the environment were tried to be determined. Through this scale, Dunlap aimed to reveal the change in public opinion from the tendency of "people should see nature only as a resource that they will use for their personal purposes" to the tendency of "people should live in harmony with nature".

The scale, which consists of 12 Likert type statements, has been accepted in wide geographies and its validity and reliability have been tested. Initially, the scale was assumed to be one-dimensional, but practitioners revealed that the scale was multidimensional, with the number of dimensions varying between 1 and 4 (Albrecht et al., 1982; Roberts and Bacon, 1997; Furman, 1998; López-Bonilla and López-Bonilla, 2016; Ntanos, et al., 2019).

That original NEP Scale was criticized for its inadequacies about internal consistency among individual responses, poor correlation between the scale and behavior, and the old-fashioned language of the statements (Anderson, 2012). In 2000, Dunlap and his colleagues reviewed the NEP scale and introduced the R-NEP scale, which consists of 15 statements and basically includes two approaches that embrace the human-centered (anthropocentric) anti-environmental approach and the nature-centered (ecocentric) environmental approach. In the statements shown below with eight odd numbers indicates the endorsement of the new environmental paradigm (NEP) if agreed to by a respondent. On the other hand, the seven even numbered items represent the dominant social paradigm (DSP) (Anderson, 2012).

Lopez-Bonilla and López-Bonilla (2016) expressed the ecocentrism and anthropocentrism under the NEP scale.

Table 1. R-NEP Scale Items

1. We are approaching to the limit of the number of people the Earth can support.
2. Humans have the right to modify the natural environment to suit their needs.
3. When humans interfere with nature it often produces disastrous consequences.
4. Human ingenuity will ensure that we do not make the Earth unlivable.
5. Humans are seriously abusing the environment.
6. The Earth has plenty of natural resources if we just learn how to develop them.
7. Plants and animals have as much right as humans to exist.
8. The balance of nature is strong enough to cope with the impacts of modern industrial nations.
9. Despite our special abilities, humans are still subject to the laws of nature.
10. The so-called "ecological crisis" facing humankind has been greatly exaggerated.
11. The Earth is like a spaceship with very limited room and resources.
12. Humans were meant to rule over the rest of nature.
13. The balance of nature is very delicate and easily upset.
14. Humans will eventually learn enough about how nature works to be able to control it.
15. If things continue on their present course, we will soon experience a major ecological catastrophe.

Source: Dunlap, R. E.; Van Liere, K. D.; Mertig, A. G. and Jones, R. E. (2000) "Measuring Endorsement of the New Ecological Paradigm: A Revised NEP Scale", Journal of Social Issues, 56(3): 425–442.

In Alnıaçık and Koç's study, in which she used R-YEP, it is seen that the distribution of factor loads concentrates on 4 groups (2009: 183):

(1) Ecological Hazard. It consists of statements about the possibility of ecological crisis, the vulnerability of the balance of nature, and the limitation of natural resources.

(2) Techno-fix. It expresses the view that human beings can overcome environmental problems thanks to their technological and scientific superiority.

(3) The Force of Nature. It contains statements about the balance of nature and the worldview that sees people as superior.

(4) The Superiority of Man. It refers to the two components of the limitedness of natural resources and the worldview that sees people as superior.

When the studies carried out in our country using the NEP scale are examined, it's found that Furman's (1998) study was the first to examine and analyze the thoughts of people living in Istanbul about the environment and environmental problems. This study by Furman has gained importance in terms of showing that environmental attitudes can be strong in developing countries as well. Because the general belief that the concern for the environment can be widespread in developed countries points out that environmental protection is in the second place behind economic growth and development in developing or underdeveloped countries due to economic concerns. Therefore, Furman drew attention by revealing a result contrary to this belief. Işıldar, in his study in 2008, evaluated the effects of environmental education on environmental approaches and behaviors in the dimension of vocational schools. Günden and Miran (2008) again applied to the NEP scale while determining the environmental

attitudes of the farmers. In the study conducted by Erdoğan (2009), environmental attitudes of students at four different universities were analyzed. Demirel et al. (2009), on the other hand, analyzed the effect of participation in recreational activities on attitudes towards the environment and the validity and reliability of the NEP scale. Alnıaçık and Koç (2009) analyzed the environmental attitudes of 1254 students from five universities using the YEP scale and, like Demirel et al., they also ensured the validity and reliability of the scale.

3. RESEARCH METHODOLOGY

In this study, it is aimed to address the following research questions (Tepe, et al.; 2022) by performing a bibliometric analysis:

RQ1. How has the literature about NEP progressed in social sciences?

RQ1.1. What are the distributions and impacts of publications over time?

RQ1.2. What are the most influential studies and authors?

RQ2. What are the important topics in the studies adopting New Environmental Paradigm?

RQ3. Are the results compatible with Bradford's Law?

To determine the NEP's scope in the literature, bibliometric analysis was employed in the study. To assess the scientific progress in a particular area, bibliometric analysis is commonly conducted by the researchers. Bibliometric analyses are used to achieve two main objectives: (1) producing the review of research in a specific field within a period of time using standard indicators, (2) examining science as a knowledge-generating system (Van Raan, 2005 from Barrios et al., 2008). Since bibliometrics has a relatively straightforward goal as analyzing published scientific research to track changes over time (Barrios et al., 2008), with the current study, an overview of NEP related research output for the period of 1978 and 2022 is provided. To observe the progress of research, standard bibliometric indicators were used such as number of publications, productivity by country and collaboration among countries, distribution of publications produced by different disciplines, most productive and influential authors, the publications with the highest impacts, the core sources related to the subject and the most common keywords to analyze. Bradford's Law of Scattering was also applied if the publications were distributed among the journal fitting with the principle of a small core group of journals involving 1/3 of all publications, a larger group of journals with the next third and the largest group publishing the rest (Garfield, 1980 from Tonta and Al 2008: 44).

As a source of information, Scopus database, which contains 40,878 scientific journals from 27 disciplines, 11,449 journals in the field of social sciences, and book series, conference proceedings and commercial publications (Scopus, 2022), was used to gather the data. A query was made on March 15, 2022, covering the period of 1978-2022. And 594 scientific publications including "New Environmental Paradigm" and "New Ecological Paradigm" principal words in the "article title, abstract and keywords"

were reached. With this dataset, a discipline-based analysis was made to showcase in which fields the NEP was adopted in the scientific research. Then, in line with the purpose of the study, the dataset was limited to the publications in social science with the search string below.

(TITLE-ABS-KEY (new-environmental-paradigm) OR TITLE-ABS-KEY (new-ecological-paradigm)) AND (LIMIT-TO (SUBJAREA , "SOCI") OR LIMIT-TO (SUBJAREA , "BUSI") OR LIMIT-TO (SUBJAREA , "PSYC") OR LIMIT-TO (SUBJAREA , "ECON"))

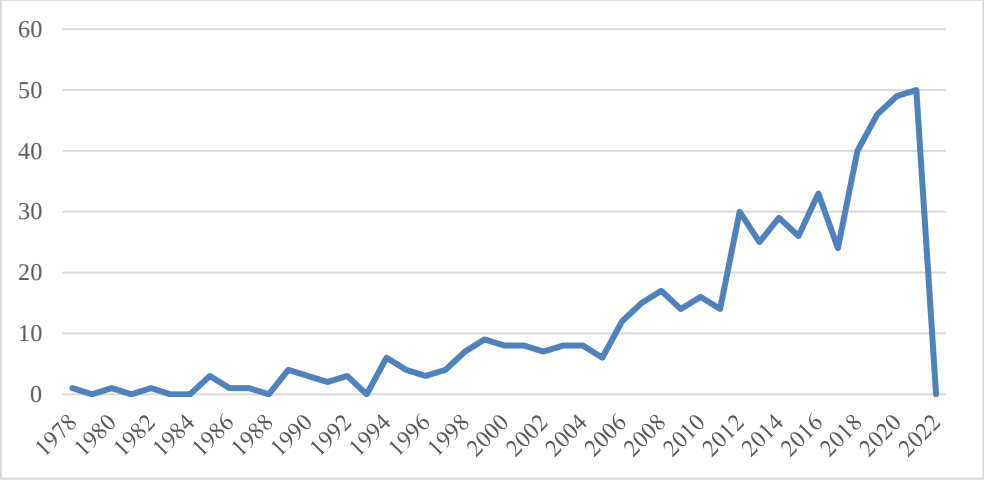
Afterwards a dataset including 377 publications in social sciences was obtained and citation analysis (most cited authors, publications, sources) was performed in order to reveal the contribution of scientists, publications and sources into the cumulative advancement in science with a quantitative measurement (Osca Lluch et al., 2009). Besides, to present the contribution of countries to the social sciences literature related to NEP, country-based analysis was performed with the collaboration network among the countries and visualized via VosViewer software. At last, to draw the conceptual structure of NEP related academic produce, most common keywords in the publications related to NEP by years were visualized on a graph via R Studio program.

4. FINDINGS AND DISCUSSION

This section clarifies the answers to the research questions with the findings of the bibliometric analysis.

In order to reveal how the literature about NEP has progressed, firstly a Scopus query was performed and reached a total number of 538 publications, which contains "New Environmental Paradigm" or "New Ecological Paradigm" in the "article title, abstract and keywords", produced by various disciplines. With this dataset, the distribution of the publications about NEP by years has been revealed beginning from 1978 that Dunlap and Van Liere came up with New Environmental Paradigm versus Dominant Social Paradigm.

Figure 1. Publishing Trend in NEP (Documents by Year)



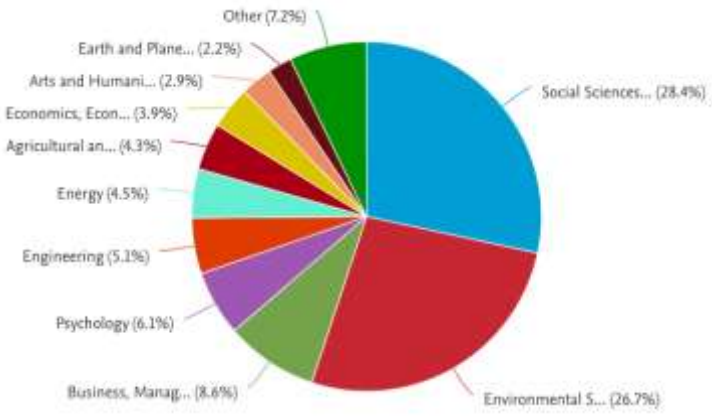
Source: This figure is retrieved from Scopus database (March 15, 2022)

Dunlap and Van Liere first published their article named "The 'new environmental paradigm': a proposed measuring instrument and preliminary results" in the Journal of Environmental Education and it began to attract the researchers' attention especially after 1990s. The greatest orientation in the academia towards NEP in environmental literature has intensified for the last ten years, since the effects of climate change in the human life have been experienced more deeply. That might be one of the drivers of academic interest into that subject. The number of studies by the last ten years is as follows; 30 (in 2012), 25 (in 2013), 29 (in 2014), 26 (in 2015), 33 (in 2016), 24 (in 2017), 40 (in 20l8), 46 (in 2019), 49 (in 2020), 50 (in 2021). When we scrutinize the studies in terms of the publication type, it is seen that 87.5% was article (471), 5.6% was conference paper (30), 3% review (16), 2.6% book chapter (14) and 5.1% was the others (12). In the gathered data retrieved from Scopus it was revealed that this subject was studied by 1210 authors and the average citations per document were 54.38, average citations per year per document were 2.864 the number of documents per author was 0.445 while the collaboration index was 2.7.

4.1. Discipline-Based Analysis

To determine which disciplines adopted New Environmental Paradigm in their research, a query in Scopus database was done and the breakdown of the disciplines were found out, as shown in Figure 2.

Figure 2. Distribution of Publications Produced by Different Disciplines Adopting NEP



Source: This figure was retrieved from Scopus database (March 15, 2022)

As it is seen from the graphic, NEP is mostly applied by the researchers in Social Sciences (28.4%) and Environmental Sciences (26.7%). Rest of the studies that conducted research by adopting New Environmental Paradigm come from diverse disciplines such as business, management and accounting (8.6%), psychology (6.1%), engineering (5.1%), energy (4.5%), agricultural and biological sciences (4.3%), economics (3.9%), arts and humanities (2.9%), etc. Social Sciences comes first in the ranking with total publications (TP) of 281, followed by Environmental Science (265 TP), Business, Management and Accounting (85 TP), Psychology (60 TP), Engineering (51 TP), Energy (45),

Agricultural and Biological Science (43 TP), Economics (39 TP), Arts and Humanities (29 TP), Earth and Planetary (22 TP).

4.2. Country-Based Analysis

In order to reveal the countries which focused on New Environmental Paradigm, so the environmental attitude subject in the academia, country-based analysis was done. The findings show that the US (144 total publications/TP), Australia (28 TP), the UK (23 TP), Canada (21 TP), South Korea (19 TP), Spain (19 TP), New Zealand (18 TP), China (14 TP), Germany (10 TP) and Türkiye (10 TP) are the main countries producing scientific output about this subject.

In addition to the most productive countries based on the number of their publications, it is meaningful to observe how influential they are in this subject. In terms of total publication numbers, the US, Australia and the UK are ranked among the top 3 the most productive countries, but when the impact of those countries on literature is examined, New Zealand with 18 TP, 791 TC and 13 h-index score it's ranked in the third line behind the US and Australia.

Table 2. The Most Productive and Influential Countries and Universities Contributing Literature

The Most Productive and Influential Countries						**The Most Productive and Influential Universities**					
		TP	**TC**	**CPP**	**h-index**		**Origin**	**TP**	**TC**	**CPP**	**h-index**
1	United States	144	16291	113.13	50	University of Otago	New Zealand	9	265	29.44	9
2	Australia	28	1061	37.89	15	University of Arizona	US	7	374	53.43	6
3	United Kingdom	23	671	29.17	12	Washington State University	US	7	5811	830.14	7
4	Canada	21	710	33.81	11	Oklahoma State University	US	6	907	151.16	6
5	South Korea	19	923	48.58	11	Oregon State University	US	5	122	24.4	4
6	Spain	19	565	37.79	11	University of Florida	US	5	173	34.6	5
7	New Zealand	18	791	43.94	13	Texas A&M University	US	5	365	73	5
8	China	14	529	37.79	11	University of California	US	5	95	17	4
9	Germany	10	286	28.6	8	University of Arkansas	US	4	188	67	3
10	Türkiye	10	90	9	5	Victoria University	Australia	4	99	24.75	4

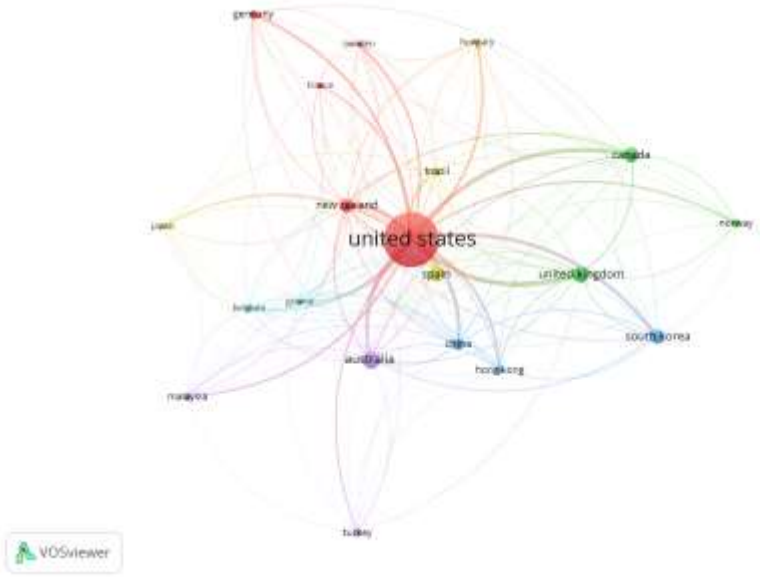
Source: This table was Created via Excel Based on the Data Retrieved from Scopus Database. (TP:Total Publication, TC: Total Citations, CPP: Citation per Publication)

At global scale the most productive and influential universities contributing to NEP related literature are originated from mostly the US. But University of Otaga from New Zealand with the highest total publication number and h-index comes first.

The collaboration network at global scale is also meaningful to see which countries directing the literature with the research they made. In Figure 3, this network was visualized via VosViewer and seven

country clusters emerged. The US with the highest number of publications (145) and citations, has links with 19 countries and it has 1106 total link strength. In the first cluster the US, France, Germany, New Zealand and Sweden forms a group. In the second cluster, Australia with 28 publications, 17 links and 233 total link strength leads cluster including Malaysia and Türkiye. The UK with 23 publications, 18 links and 194 total link strength stays in the Cluster 3 with Canada and Norway. South Korea, Hong Kong and China forms another cluster. Brazil, Japan and Spain in Cluster 5, Belgium and Greece in Cluster 6, Hungary in Cluster 7 stand in this collaboration network including the countries with minimum 5 publications and 1 citation.

Figure 3. Collaboration Network among the Countries



Source: This figure was created via VosViewer based on the data retrieved from Scopus database.

4.3. Citation Analysis

Citation analysis serves as a quantitative measurement for displaying the contribution of scientists, publications and sources into scientific progress (Osca Lluch et al., 2009). To assess an author's contribution to the literature, the number of publications - for author's scientific productivity, and the number of citations and h-index value -for author's impact on the progress of the literature are used as the main indicators in bibliometrics.

4.3.1. Author and Publication Influence

In Table 3, the most productive authors are listed depending on the number of publications. Dunlap is the most productive author with his six publications about NEP, Harraway and Shepherd follows him. The contribution of an author to the literature is measured with not only the number of the publications but also the effect of these publications on the academic progress. In other words, the impact of an author is assessed by the citations that his/her publication gets. From this perspective, Dunlap as

the introducer of New Environmental Paradigm, with his 6 publications has the highest citations (5719) with 6 h-index score, then Harraway and Shepherd follow him with 6 publications and 192 citations (6 h-index score).

As a new scientometric indicator, *h*-index was proposed by Hirsch in 2005 to compare scientist's impact in a field. According to Hirsch, "*if an author has an h-index of 10, then he has 10 papers published that have a minimum of 10 citations each. The minimal possible total citation count in this case is 100"* (Jokić, 2009: 6). By utilizing the h-index score of two scientists, it is possible to measure their impact on the literature even if they do not have similar number of papers or citations. In this case, with the highest h-index score Dunlap's impact in the literature is proved.

Table 3. The Most Productive and Influential Authors

		TP	TC	CPP	h-index
1	Dunlap, R.E.	6	5719	953.2	6
2	Harraway, J.	6	192	32	6
3	Shephard, K.	6	192	32	6
4	Lovelock, B.	5	139	27.8	5
5	Collado, S.	4	60	15	4
6	Corraliza, J.A	4	272	68	4
7	Jowett, T.	4	165	41.3	4
8	Johnson, B.	4	151	37.8	4
9	Deaker, L.	4	139	34.8	4
10	Noe, F.P.	4	289	72.35	3

Source: This table was created via Excel based on the data retrieved from Scopus database. (TP:Total Publication, TC: Total Citations, CPP: Citation per Publication)

Table 4 shows the most cited "cornerstone" publications that have the greatest influence on the other scientific studies and will help the future researchers intended to comprehend the subject. The most influential publications belong to the following authors: Dunlap, et al. (2000), Dunlap and Van Liere (1978), Mayer and Frantz (2004), Wesley Schultz and Zelezny (1999), Taylor (2000), Dunlap (2008), Christopher, et al., (2003), Roberts and Bacon (1997), Catton and Dunlap, (1980) and Vining & Ebreo, (1992). Most of those publications concentrated on new environmental paradigm and the NEP scale itself, pro-environmental behavior and attitudes/concerns and values as the driver of it.

Table 4. The Most-cited Publications

	Authors / Years	<2019	2019	2020	2021	Total
1	Dunlap, R. E., Van Liere, K. D., Mertig, A. G., & Jones, R. E. (2000). Measuring endorsement of the new ecological paradigm: A revised NEP scale. *Journal of Social Issues*, 56(3), 425-442.	1995	260	265	294	2814
2	Dunlap, R. E., & Van Liere, K. D. (1978). The "new environmental paradigm". *Journal of Environmental Education*, 9(4), 10-19.	1464	95	100	107	1766
3	Mayer, F. S., & Frantz, C. M. (2004). The connectedness to nature scale: A measure of individuals' feeling in community with nature. *Journal of Environmental Psychology*, 24(4), 503-515.	626	124	165	185	1100
4	Wesley Schultz, P., & Zelezny, L. (1999). Values as predictors of environmental attitudes: Evidence for consistency across 14 countries. *Journal of Environmental Psychology*, 19(3), 255-265.	492	44	56	48	640
5	Taylor, D. E. (2000). The rise of the environmental justice paradigm: Injustice framing and the social construction of environmental discourses. *American Behavioral Scientist*, 43(4), 508-580.	406	44	29	43	522
6	Dunlap, R. (2008). The new environmental paradigm scale: From marginality to worldwide use. *Journal of Environmental Education*, 40(1), 3-18.	316	56	50	71	493
7	Christopher, C., Kotchen, M. Moore, M. R. (2003). Internal and external influences on pro-environmental behavior: Participation in a green electricity program, *Journal of Environmental Psychology*, 23(3), 237–246.	307	47	39	46	439
8	Roberts, J. A., & Bacon, D. R. (1997). Exploring the subtle relationships between environmental concern and ecologically conscious consumer behavior. *Journal of Business Research*, 40(1), 79-89.	306	30	34	38	408
9	Catton, W. &Dunlap, R. (1980). A New Ecological Paradigm for Post-Exuberant Sociology, *American Behavioral Scientist*, 24(1), 15 – 47.	340	17	15	23	395
10	Vining, J., & Ebreo, A. (1992). Predicting recycling behavior from global and specific environmental attitudes and changes in recycling opportunities. *Journal of Applied Social Psychology*, 22(20), 1580-1607	324	25	24	17	390

Source: This table was created via Excel based on the data retrieved from Scopus database.

4.3.2. Most Influential/Core Sources

Besides the most-cited publications, the most productive and influential journals are also important for the researchers in this field. As it can be seen in Table 5, the most productive and influential journal in this subject is *Journal of Environmental Education* with 35 publications and 4334 citations. Based on the total publication number, Sustainability Switzerland ranked as the second most productive source, followed by Environmental Education Research and Society and Natural Resources with 13 publication each of them. Even though *Journal of Environmental Psychology* has fewer publications than the first four ranked journals, it has a greater impact on the advancement of literature with higher h-index. H-index is used to assess the impact of not only the authors but also the sources in the academia (Jokić, 2009). Based on the h-index score of the most productive journals ranks changed and Journal of Environmental Education (26), Journal of Environmental Psychology (11), Environmental Education Research (10), Sustainability Switzerland (10), Society and Natural Resources (9).

Table 5. The Most Productive and Influential Journals

	The Most Productive Sources						The Most Influential Sources				
		TP	**TC**	**CPP**	**h-index**			**TP**	**TC**	**CPP**	**h-index**
1	Journal of Environmental Education	35	4334	123.82	26	1	Journal of Environmental Education	35	4334	123.82	26
2	Sustainability Switzerland	25	267	10.68	10	2	Journal of Environmental Psychology	11	3519	319.90	11
3	Environmental Education Research	13	377	29	10	3	Environmental Education Research	13	377	29	10
4	Society and Natural Resources	13	413	31.77	9	4	Sustainability Switzerland	25	267	10.68	10
5	Journal of Environmental Psychology	11	3519	319.90	11	5	Society and Natural Resources	13	413	31.77	9
6	Ecological Economics	7	921	131.57	7	6	Ecological Economics	7	921	131.57	7
7	Journal of Cleaner Production	7	124	17.71	5	7	Tourism Management	5	555	111	5
8	Australian Journal of Environmental Education	6	39	6.5	4	8	Journal of Business Ethics	5	382	76.4	5
9	Tourism Management	5	555	111	5	9	Journal of Cleaner Production	7	124	17.71	5
10	Journal of Business Ethics	5	382	76.4	5	10	Australian Journal of Environmental Education	6	39	6.5	4

Source: This table was created via Excel based on the data retrieved from Scopus database. (TP:Total Publication, TC: Total Citations, CPP: Citation per Publication)

In order to find out core journals contributing to the literature about NEP, Bradford's Law is applied. Bradford's Law of Scattering tries to define the distribution of the publications on a specific subject among the journals (Garfield, 1980) and according to this law, the scientific journals publishing articles on specific subjects can be categorized based on diminishing return, then core journal groups can be formed. The law assumes that the literature developed on a particular subject covers the publications which are published by three group of journals: (1) A small core group of journals that publishes one third of all publications, (2) A larger group of journals publishes the next third (3) while the biggest group of journals publishes the rest (Garfield, 1980 from Tonta and Al 2008: 44). In this study, 377 studies, 346 of which were articles, were published by 207 different publication sources. According to the Bradford's Law, the core group of journals on this subject is shown in the figure below that contains Journal of Environmental Education, Sustainability Switzerland, Environmental Education Research, Society and Natural Resources, Journal of Environmental Psychology, Ecological Economics, Journal of Cleaner Production, Australian Journal of Environmental Education, Journal of Business

Ethics, Tourism Management. As it's showcased in Table 6 one third of the publications was published by 10 core sources, and the rest was scattered compatible with Bradford's Law.

Figure 4. Core Sources for NEP Subject

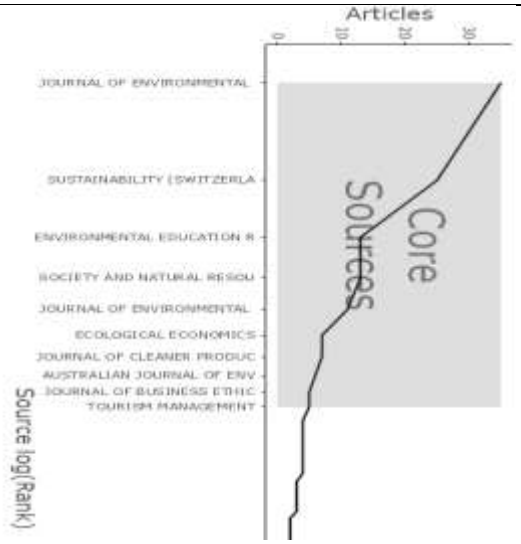


Table 6: Distribution of Journals According to Bradford's Law

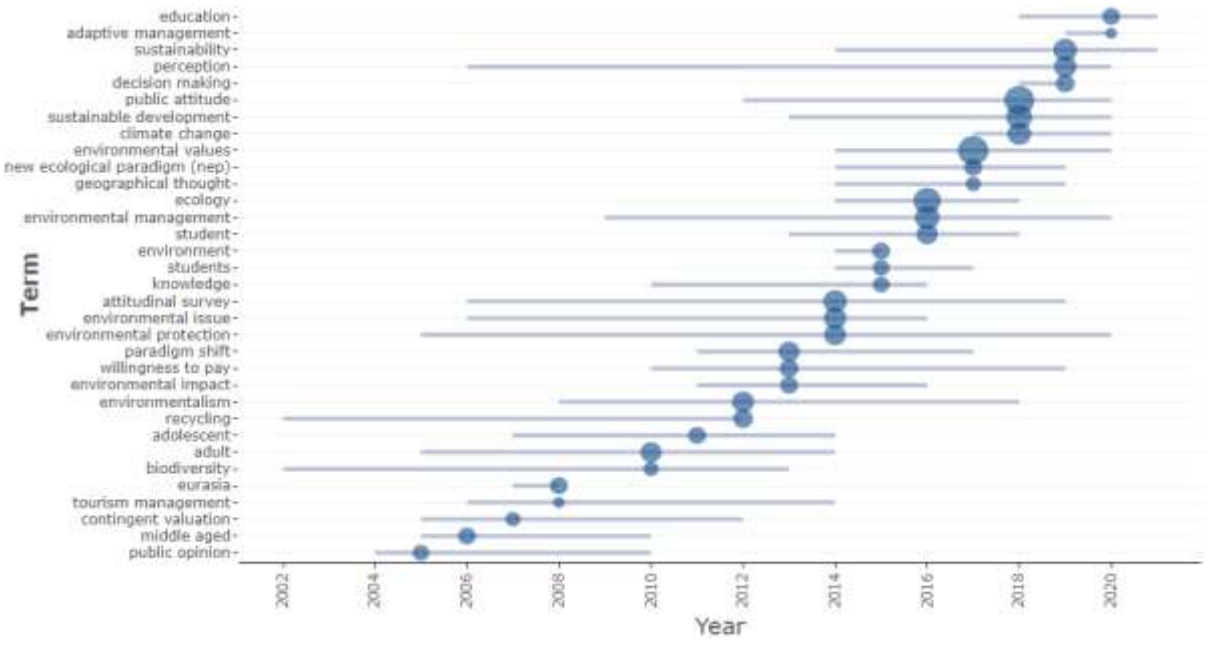
Primary Sources:
127 publications (%33,69) - 10 sources
Journal of Environmental Education (35)
Sustainability (Switzerland) (25)
Environmental Education Research (13)
Society and Natural Resources (13)
Journal of Environmental Psychology (11)
Ecological Economics (7)
Journal of Cleaner Production (7)
Australian Journal of Environmental Education (6)
Journal of Business Ethics (5)
Tourism Management (5)
Secondary Sources:
126 publications (%33,42) – 73 sources
Tertiary Sources:
124 publications (%32,89) - 123 sources

Source: This figure was created via R Studio program.

4.4. The Most-Used Keywords in the Research Applying NEP

In this part of the study, the most popular keywords were determined based on the data retrieved from Scopus database to see the important topics in the studies adopting NEP. With Figure 5, it's tried to be visualized which keywords were commonly used in the publications related to NEP by years. The scatter of those keywords was presented based on the usage frequency per year on the graphic below.

Figure 5. Most Used Keywords in the Publications related to NEP by Years



Source: This figure was created via R Studio program.

The most common keywords in the publications are public attitude and environmental values that both of them are closely related to environmental attitudes measured by New Environmental Paradigm Scale. For the latest year, as the sustainable development occupying the world agenda, the research conducted about environmental issues also involve sustainable development, perception, sustainability, ecology, environmental management, environmental protection, environmental impact, and paradigm shift keywords. Those keywords give a clue about publications focusing on both individual's and public's environmental concern. So, this justifies the fact that success of a paradigm shift to protect the environment requires both individual and public involvement.

5. CONCLUSION

In this study, it's aimed to reveal how New Environmental Paradigm echoed in the academia – in social sciences. To perform the bibliometric analysis, the dataset was obtained from Scopus database The findings pointed out that NEP was mostly adopted by the researchers in the field of social and environmental sciences. As half of the NEP related publications were made in social and environmental sciences; business, management and accounting (8.6%), psychology (6.1%), engineering (5.1%), energy (4.5%), agricultural and biological sciences (4.3%), economics (3.9%), arts and humanities (2.9%) were other disciplines containing studies that conducted research by adopting New Environmental Paradigm.

In the present study, it's also examined the contributions of the countries and universities to the cumulative progress of the literature with their research. The findings showed that the United States produced the largest output in the field with 145 publications and created the largest impact with the highest citation volume. Naturally, in the collaboration network the US stayed in the center of the network at global scale. The findings of the most productive and influential universities also supported this fact, since 8 out of 10 universities were from The US in the top ten university list.

With the citation analysis performed, the most productive and influential authors were determined as Dunlap, R.E., Harraway, J. and Shephard, K. at the top three authors. Besides, the milestone publications were presented to shed light for the researchers who wants to know the subject. The core journals were identified and tested if the journals were scattered compatible with Bradford's Law. Among the core journals with the highest impact in the literature, Journal of Environmental Education, Journal of Environmental Psychology and Environmental Education Research have been the most influential sources based on their h-index scores.

Since NEP was proposed against Dominant Social Paradigm in 1978, the publishing trend of NEP related studies has been intensified for the last ten years (2012-2022) in social sciences. It might be seen as a consequence of the effects of global warming/increasing carbon emissions on economies or individual lives with floods, droughts, extraordinary weather events raising the environmental concern. On the other hand, there are studies investigating the environmental concern trends at country level and have found out a declining interest (Franzen and Vogl, 2013; Melis et al., 2014), a stable interest

(Benedetta and Vincenzo, 2020) and rising (Dunlap, 1991; Gutierrez, 2009) interest (from Xiaobin, et al., 2022). As the increasing number of the studies adopting NEP indicates, it will continue to attract the academicians' interest as long as the sustainability and sustainable development occupy the world agenda and individual lives. Hence, among the most common keywords in the NEP related publications "sustainability, sustainable development, climate change, ecology, environmental values" occupy a considerable place.

The world is on the edge of a new era, a strong transformation is needed to start the recovery process of the world for the future generations' wellness. On the macro level, this process has been started by the governments on several supranational platforms commending the adoption of a new worldview for development – "sustainability". As a remedy for the destiny of humanity, sustainability is defined as "*the environmentalist worldview, which aims to ensure economic development without sacrificing the principle of using environmental values and natural resources with rational methods, taking into account the rights and benefits of present and future generations* (Keleş, 1998)". With the adoption of sustainability, a macro paradigm shift can be achieved in favor of environment that leads to leaving dominant social paradigm behind and looking for the ways of living harmony with the nature. But macro paradigm shift must be strengthened by consumers' environmentalist attitudes as the driver of environmental behavior that play an accelerator role on the businesses' value offerings. Here New Environmental Paradigm with its principles guide both the people and business world about how we should perceive and treat the nature and the world. The management and conservation of environment require an ecocentric approach opposed to anthropocentric approach that does not consider itself superior to all other beings or that holds itself ethically responsible for the protection of nature. Future research may explore the adoption or transition of an ecocentric approach by businesses and individuals to meet the needs of transformation in economies to achieve sustainable development goals. On the other side, to improve the understanding of the environmentally conscious/pro-environmental consumer behavior within different contexts and geographies/cultures, and changing environmental concern NEP will probably continue to be the most common used scale for the measurement of environmental attitude and the worldviews of people in the future.

Finally, as a limitation, the study presents the findings of the bibliometric analysis performed on the dataset obtained from Scopus database only. For future research, the study can be expanded with other publications that can be reached from Web of Science (WOS) database, Google Scholar and also Turkish databases for the scientific publications.

REFERENCES

Albrecht, D.E., Bultena, G., Hoiberg, E and Nowak, P. (1982) "The New Environmental Paradigm Scale", Journal of Environmental Education. 13: 39-43.

Alnıaçık, Ü. ve Koç, F. (2009) "Yeni Çevresel Paradigma Ölçeği ile Üniversite Öğrencilerinin Çevreye Yönelik Tutumlarının Değerlendirilmesi", Balıkesir Üniversitesi Burhaniye MYO Bölgesel Kalkınma Kongresi Bildiri Kitabı (ss.178-185). Balıkesir. 14-16 Kasım 2009.

Anderson, M. (2012) "New Ecological Paradigm (NEP) Scale", The Berkshire Encyclopedia of Sustainability: Measurements, Indicators, And Research Methods for Sustainability, pp.260-262.

Ay, C. ve Ecevit, Z. (2005) "Çevre Bilinçli Tüketiciler", Akdeniz Üniversitesi İİBF Dergisi, 5(10): 238-263.

Ay, U. (2017) "Çevreci Tüketim Davranışlarının Değer-İnanç-Norm Kuramı Temelinde İncelenmesi", Tüketici ve Tüketim Araştırmaları Dergisi, 9 (1): 1-33.

Bamberg, S. and Möser, G. (2007) "Twenty Years After Hines, Hungerford, and Tomera: A New Meta-Analysis of Psycho-Social Determinants of Pro-Environmental Behaviour", Journal of Environmental Psychology, 27(1): 14–25.

Balador, Z.; Gjerde, M.; Vale, B. and Isaacs, N. (2021) "Towards a Better Understanding of People's Underlying Ecological Worldviews in New Zealand", Environment, Development and Sustainability, 23:1087–1103 (2021), https://doi.org/10.1007/s10668-020-00600-9.

Barrios, M.; Borrego, A.; Vilaginés, A., Ollé, C. and Somoza, M. (2008) "A Bibliometric Study of Psychological Research on Tourism", Scientometrics, 77(3): 453–467.

Baudrillard, J. (1998) "The Consumer Society: Myths and Structures", London: Sage.

Bostrom, A., Barke, R., Turanga, R.M. and O'Connor, R.E. (2006) "Environmental Concerns and the New Environmental Paradigm in Bulgaria", Journal of Environmental Education, 37(3):25-40.

Cantzen, R. (2000) "Daha Az Devlet Daha Çok Toplum", çev. Veysel Atayman, 2. Baskı, İstanbul: Ayrıntı Yayınları.

Chan, R. Y. K. (2001) "Determinants of Chinese Consumers' Green Purchase Behavior", Psychology and Marketing, 18(4): 389-413.

Chen, M. F. (2015) "An Examination of the Value-Belief-Norm Theory Model in Predicting Pro-Environmental Behaviour in Taiwan", Asian Journal of Social Psychology, 18(2): 145-151.

Corral-Verdugo, V. and Armendáriz, L. I. (2000) "The "New Environmental Paradigm" in a Mexican Community", Journal of Environmental Education, 31(3): 25-31, doi: 10.1080/00958960009598642.

Çabuk, S. ve Nakıboğlu, M.A.B. (2003) "Çevreci Pazarlama ve Tüketicilerin Çevreci Tutumlarının Satın Alma Davranışlarına Etkileri ile İlgili Bir Uygulama", Çukurova Üniversitesi Sosyal Bilimler Enstitüsü Dergisi, 12(12): 39-54.

Demirel, M., Gürbüz, B. ve Karaküçük, S. (2009) "Rekreasyonel Aktivitelere Katılımın Çevreye Yönelik Tutum Üzerindeki Etkisi ve Yeni Ekolojik Paradigma Ölçeği'nin Geçerliği ve Güvenirliği", Spormetre Beden Eğitimi ve Spor Bilimleri Dergisi, 7(2): 47-50.

Dunlap, R. E. and Van Liere, K. D. (1978) "The "New Environmental Paradigm", Journal of Environmental Education, 9(4): 10-19.

Dunlap, R.E.; Van Liere, Kent D.; Mertig, Angela G. and Jones, R.E. (2000) "Measuring Endorsement of the New Ecological Paradigm: A Revised NEP Scale", Journal of Social Issues, 56(3): 425–442.

Dunlap, R. (2008) "The New Environmental Paradigm Scale: From Marginality to Worldwide Use", Journal of Environmental Education, 40(1): 3-18.

Erdoğan, N. (2009) "Testing The New Ecological Paradigm Scale: Turkish Case", African Journal of Agricultural Research, 4 (10): 1023-1031.

Ertan, K. (1998) "Çevre Etiği", Amme İdaresi Dergisi, 31(1):125-139.

Fraj, E. and Martinez, E. (2007) "Ecological Consumer Behavior: An Empirical Analysis", International Journal of Consumer Studies, 31: 26-31.

Furman, A. (1998) "A Note on Environmental Concern in a Developing Country. Results From an Istanbul Survey", Environment and Behavior. 30(4): 520-534.

Hartmann, P., Apaolaza, V. and D'Souza, C. (2018) "The Role of Psychological Empowerment in Climate-Protective Consumer Behaviour: An Extension of the Value-Belief-Norm Framework", European Journal of Marketing, 52(1/2): 392-417.

Gareiou, Z. and Zervas, E. (2021) "Application of the New Environmental Paradigm (NEP) scale in Greece", OP Conf. Ser.: Earth Environ. Sci. 899 012047.

Gifford, R. and Nilsson, A. (2014) "Personal and social Factors That Influence Pro-Environmental Concern and Behaviour: A Review", International Journal of Psychology : Journal International de Psychologie, 49(3): 141–157, https://doi.org/10.1002/ijop.12034.

Günden, C. ve Miran, B. (2008) "Yeni Çevresel Paradigma Ölçeğiyle Çiftçilerin Çevre Tutumunun Belirlenmesi: İzmir İli Torbalı İlçesi Örneği", Ekoloji, 18(69): 41-50.

Güngörmez, A. (2006) "Fritjof Capra'da Kartezyen Düşüncenin Eleştirisi", Yüksek Lisans Tezi, Atatürk Üniversitesi, Sosyal Bilimler Enstitüsü, Erzurum.

Hawcroft, L. J. and Milfont, T. (2010) "The Use (and abuse) of The New Environmental Paradigm Scale over The Last 30 Years: A Meta-Analysis", Journal of Environmental Psychology, 30, 143–158, doi.org/10.1016/j.jenvp.2009.10.003.

Heimlich, J. E. and Ardoin, N. M. (2008) "Understanding Behavior to Understand Behavior Change: A Literature Review", Environmental Education Research, 14: 215 - 237.

Ibtissem, M. (2010) "Application of Value Belief Norms Theory to Energy Conservation Behavior", Journal of Sustainable Development, 3(2):129-139.

Işıldar, G. (2008) "Meslek Yüksekokulları Boyutunda Çevre Eğitiminin Çevreci Yaklaşımlar ve Davranışlar Üzerindeki Etkilerinin Değerlendirilmesi", Türk Eğitim Bilimleri Dergisi, 6(4): 759-778.

İmga, O. (2006) "Küreselleşen Çevresel Krize, Hakim Paradigma Dışı Bir Bakış olarak Derin Ekolojik Yaklaşım", Süleyman Demirel Üniversitesi Sosyal Bilimler Enstitüsü Dergisi, 2(4): 84-97.

Jokić, M. (2009) "H-index as a New Scientometric Indicator", Biochemia Medica, 19(1): 5–9.

Karakoç, A. G. (2004) "Çevre Sorunlarına Etik Yaklaşım", Mehmet C. Marın, Uğur Yıldırım (ed.), "Çevre Sorunlarına Çağdaş Yaklaşımlar,-Ekolojik, Ekonomik, Politik ve Yönetsel Perspektifler" içinde (s. 59-72). İstanbul: Beta Basın Yayım.

Keleş, R. (1998) "Kentbilim Terimleri Sözlüğü", Ankara: İmge Kitapevi.

Kilbourne, W., McDonagh, P. and Prothero A. (1997) "Sustainable Consumption and the Quality of Life: A Macromarketing Challenge to the Dominant Social Paradigm", Journal of Macromarketing, 17(1): 4–24, http://jmk.sagepub.com/content/17/1/4.short.

Klöckner, C. (2013) "A Comprehensive Model of The Psychology of Environmental Behaviour—A meta-analysis", Global Environmental Change, 23(5): 1028-1038.

Kollmuss, A. and Agyeman, J. (2002) "Mind the Gap: Why Do People Act Environmentally and What Are The Barriers To Pro-Environmental Behavior?", Environmental Education Research, 8:3, 239-260, DOI: 10.1080/13504620220145401.

López-Bonilla, L.M. and López-Bonilla, J.M. (2016) "From the New Environmental Paradigm to the Brief Ecological Paradigm: A Revised Scale in Golf Tourism", Anatolia, 27: 227–236.

Lovelock, J. (1979) "GAIA A New Look at Life on Earth", Oxford: Oxford University Press.

Milbrath L.W. (1984) "Environmentalists: Vanguard for a New Society", Albany, NY: SUNY Press.

Ntanos, S., Kyriakopoulos, G. Skordoulis, M., Chalikias, M. and Arabatzis, G. (2019) "An Application of the New Environmental Paradigm (NEP) Scale in a Greek Context", Energies 2019, 12(2), 239, https://doi.org/10.3390/en12020239.

Nordlund, A. M. and Garvill, J. (2002) "Value Structures Behind Proenvironmental Behavior", Environment and Behavior, 34(6): 740-756.

Nordlund, A. M. and Garvill, J. (2003) "Effects of Values, Problem Awareness, and Personal Norm on Willingness to Reduce Car Use", Journal of Environmental Psychology. 23: 339-347.

Ntanos, S.; Kyriakopoulos, G.; Skordoulis, M.; Chalikias, M. and Arabatzis, G. (2019) "An Application of the New Environmental Paradigm (NEP) Scale in a Greek Context", Energies, 12, 239, https://doi.org/10.3390/en12020239.

Osca Lluch, J., Velasco, E., Lopez, M. and Haba, J. (2009) "Co-authorship and Citation Networks in Spanish History of Science Research", Scientometrics, 80 (2): 373-383.

Pooley, J. A. and O'Connor, M. (2000) "Environmental Education and Attitudes Emotions and Beliefs are What is Needed", Environment and Behavior, 32(5): 711-723.

Roberts, J. A. and Bacon, D. R. (1997) "Exploring the Subtle Relationships between Environmental Concern and Ecologically Conscious Consumer Behavior", Journal of Business Research, 40(1): 79-89.

Schlegelmich, B. B.; Bohlen, G. M. and Diamantopoulos, A. (1996) "The Link between Green Purchasing Decisions and Measures of Environmental Consciousness", European Journal of Marketing, 30(5):35-55.

Scopus (2022) "Sources", https://www.scopus.com/sources.uri.

Shrum, L. J.; McCarty, J. A. and Lowrey, T. M. (1995) "Buyer Characteristics of The Green Consumer And Their Implication For Advertising Strategy", Journal of Advertising, 24(2): 71-81.

Steg, L. and Vlek, C. (2009) "Encouraging Pro-Environmental Behaviour: An integrative review and research agenda", Journal of Environmental Psychology, 29: 309–317.

Stern, P. C., Dietz, T. and Guagnano, G. A. (1995) "The New Ecological Paradigm in Social-Psychological Context", Environment and Behavior, 27(6): 723–743. https://doi.org/10.1177/0013916595276001.

Tepe, G., Geyikci, U.B. and Sancak, F.M. (2022) "FinTech Companies: A Bibliometric Analysis", International Journal of Financial Studies, 10(2):1-17, https://doi.org/10.3390/ijfs 10010002 .

Tonta, Y. and Al., Um. (2008) "Türkçe Makalelerin Dergilere Dağılımı ve Bradford Yasası", Bilgi Dünyası, 9(1): 41-66.

Tuna, M. (2007) "Çevrecilik, Tarihsel, Teorik, felsefi temelleri ve Küreselleşmesi", Ed. Ayşegül Mengi, "Çevre ve Politika Başka Bir Dünya Özlemi" içinde (s. 187-220) İmge Kitabevi.

UN (United Nations), (1987) "Our Common Future - Report of the World Commission on Environment and Development", https://www.are.admin.ch/dam/are/en/dokumente/nachhaltige_entwicklung/dokumente/bericht/our_common_futurebrundtlandreport1987.pdf.download.pdf/our_common_futurebrundtlandreport1987.pdf (16.03.2023).

UN (United Nations) (n.d.a) "The 17 Goals", https://sdgs.un.org/goals (16.03.2023).

UN (United Nations) (n.d.b) "Take Action – The Lazy person's Guide to Saving the World", https://www.un.org/sustainabledevelopment/takeaction/, (16.03.2023).

Xiaobin, L., Liman Man, W. L., Weiwei, X. and Qishan, Z. (2022) "A Meta-Analysis of Temporal Shifts in Environmental Concern between 1994 and 2017: An Examination of the New Environmental Paradigm", Anthropocene, 38, https://doi.org/10.1016/j.ancene.2022.100335

Xiao, C. and Buhrmann, J. (2017) "The Structure and Coherence of the New Environmental Paradigm: Reconceptualizing the Dimensionality Debate", Human Ecology Review, 23(1):179-198.

Xu, X-M., Ou, S-J. and Huang, C. (2021) "Reexamine the Relationship Between New Environmental Paradigm and Low-Carbon Consumption Behavior", IOP Conf. Ser.: Earth Environ. Sci. 766 012068.

Vining, J. and Ebreo, A. (1992) "Predicting Recycling Behavior from Global and Specific Environmental Attitudes and Changes in Recycling Opportunities", Journal of Applied Social Psychology, 22(20): 1580-1607.

Yakut, E. (2021) "A VBN theory View on Pro-Environmental Behavior and Life Satisfaction: Turkey's Recent Legislation on Plastic Carry Bags", Current Psychology, 40, 10.1007/s12144-021-01353-y.

Hakem Değerlendirmesi: Dış bağımsız.
Çıkar Çatışması: Yazar çıkar çatışması bildirmemiştir.
Finansal Destek: Yazar bu çalışma için finansal destek almadığını beyan etmiştir.
Teşekkür: -

Peer-review: Externally peer-reviewed.
Conflict of Interest: The author has no conflict of interest to declare.
Grant Support: The author declared that this study has received no financial support.
Acknowledgement: -
