

Major Trends in Ecolinguistic Research: A Bibliometric Analysis

Nur Afnita Asfar

(Master of Linguistics, Universitas Warmadewa, Indonesia)

ABSTRACT: *Ecolinguistics is a relatively new discipline. This article intended to analyze the Trend Of Ecolinguistic Research During The Last Decade by Bibliometric Analysis. The scope of this study was to look at ecolinguistic studies from 2012 to 2021 using Scopus databases. The researcher chooses Scopus because Scopus is a database of scholarly journal titles, and it is the largest abstract and citation database of peer-reviewed literature. It provides bibliometric analysis, including global and local metrics for authors, papers, journals, institutions, and country comparisons. The keywords (“ecolinguistic*” OR “language and ecology”) were entered into the “topic” sections, and 186 studies were reached (February 16, 2022). The aims of this research are to know which publications (including journal articles, proceedings, books, and book chapters) and organization have been most highly cited in Ecolinguistic research throughout the year, who is the most cited authors in in Ecolinguistic research publication throughout the year and which countries have been most productive in Ecolinguistic research publication throughout the year. The result shows that the researcher can conclude that the United Kingdom and Australia have the most significant Ecolinguistic publications compared to 44 other countries. However, based on the network visualization of co-authorship countries, the Ecolinguistic publications from the two countries were from 2016 to 2018, while the country with the minor Ecolinguistic publication was from 2020 to date (see yellow nodes). The network visualization of countries co-authorship above is set with a minimum number of documents of a country are 1 of the 46 countries with 9 clusters.*

KEYWORDS -Bibliometric Analysis, Ecolinguistics, Scopus Database, Vosviewer

I. INTRODUCTION

Scopus is a citation and abstract database launched in 2004 but covers records of previous years dating as 1950. The database is provided and managed by Elsevier. Currently, it holds over 70 million records of peer-reviewed articles, reviews, notes, editorials, surveys, book and book chapters, monographs, patents, and conference proceedings of publishers of all academic domains. Scopus uses four quality assessment measures to rank and determines the impact of journals indexed. These include h-index, Citescore, SJR (SCImago Journal Rank), and SNIP (Source Normalized Impact per Paper) (Okagbue et al., 2018). Scopus is recognized as the largest abstract and citation database of peer-reviewed literature covering a wide range of subjects. Thus, using Scopus is an attempt to cover more topics that may not be available in WoS (Md Khudzari et al., 2018).

Generally, bibliometric analysis refers to several frameworks, tools, and procedures to study and analyze citations of scholarly publications. Researchers have used bibliometric techniques to track relationships amongst academic journal citations. Bibliometrics analysis studies quantitative aspects of recorded information. Koo (2017) stated that the bibliometric study uses various approaches of citation analysis in order to determine connections between researchers and their work. A research trend is the collective action of a group of researchers, each of which begins to pay considerable attention to a specific scientific topic: read scientific

publications on this topic, refer to them, and publish the results of their research (Liu et al., 2012). Analyzing research trends can be done in any scope. One of them is Ecolinguistic.

The 'eco' in 'Ecolinguistics' stands for 'ecology' and 'ecological'; as such, Ecolinguistics is also called 'ecological linguistics.' When ecology is the study of the relationships between living organisms, including humans, and their physical environment (Ecological Society of America), the primary purpose of language is to facilitate communication, and the study of language how it is put together and how it functions is called linguistics. The British Ecological Society rightly states: "Ecology helps us understand how the world works. It provides useful evidence on the interdependence between people and the natural world, and as well the consequences of human activity on the environment." (Dash, 2019:253)

The fact that language includes a wide range of concepts and the fact that it enters into almost every aspect of human life makes the application of linguistic analysis of a broad type. This human means of interaction can be speculated from different standpoints. Ecolinguistics is the study of language according to the environment it is used in. The term emerged in the 1990s as a new paradigm of language study that speculates the intra-relations, inter-relations, and extra-relations of language and environment and combinations of these relations. This new trend in the conceptualization of human language eventually leads linguistic criteria to overlap with many other aspects that correlate with linguistic behavior. The scope of this study was to look at ecolinguistic studies from 2012 to 2021 using Scopus databases. The researcher chooses Scopus because Scopus is a database of scholarly journal titles, and it is the largest abstract and citation database of peer-reviewed literature. It provides bibliometric analysis, including global and local metrics for authors, papers, journals, institutions, and country comparisons. The keywords ("ecolinguistic*" OR "language and ecology") were entered into the "topic" sections, and 186 studies were reached (February 16, 2022). The aims of this research are to know which publications (including journal articles, proceedings, books, and book chapters) and organization have been most highly cited in Ecolinguistic research throughout the year, who is the most cited authors in in Ecolinguistic research publication throughout the year and which countries have been most productive in Ecolinguistic research publication throughout the year.

II. METHOD

The scope of this study was to look at ecolinguistic studies from 2012 to 2021 using Scopus databases. The researcher chooses Scopus because Scopus is a database of scholarly journal titles, and it is the largest abstract and citation database of peer-reviewed literature. It provides bibliometric analysis, including global and local metrics for authors, papers, journals, institutions, and country comparisons. The keywords ("ecolinguistic*" OR "language and ecology") were entered into the "topic" sections, and 186 studies were reached (February 16, 2022).

III. RESULT AND DISCUSSION

The VOSviewer program was used for bibliometric analysis to reveal the network visualization of the most used keywords, words in the abstracts, citation analyses, and co-citation analyses in the studies. Three researchers conducted the data analysis procedure. VOSviewer is a software tool for constructing and visualizing bibliometric networks. These networks may, for instance, include journals, researchers, or individual publications, and they can be constructed based on citation, bibliographic coupling, co-citation, or co-authorship relations. VOSviewer is a widely-used tool with a user-friendly graphic interface and helps create bibliometric networks of journals, authors, publications, organizations, and countries (Sharifi, 2020). Co-authorship, co-occurrence, citation, bibliographic coupling, and co-citation analyses are used to create these networks (Van Eck and Waltman, 2009).

VOSviewer also offers text mining functionality that can be used to construct and visualize co-occurrence networks of important terms extracted from a body of scientific literature. This method is especially beneficial for this study since its word co-occurrence analysis enables the identification of crucial research subjects and the detection of significant research clusters linked to urban sustainability evaluation. According to Van Eck and Waltman (2020), VOSviewer provides for the introduction of a thesaurus file that may be used for data cleaning

by integrating different forms of phrases, author names, and test tubes. The researcher used the VOSviewer 1.6.18 version for this study.

In addition to using the Vosviewer application, the researcher also uses the Tableau Public application to help visualize data more efficiently. Tableau Public is a free service that lets anyone publish interactive data visualizations to the web. The visualizations can be embedded into web pages and blogs, they can be shared via social media or email, and they can be made available for download to other users (Tableau Software, 2017). However, this software is still relatively unknown in the agricultural area and among agricultural specialists and farmers, although it can provide an excellent and valuable method for their work, knowledge, and education. Tableau provides a much more easy to understand and use interface from one side and the other – much more possibilities for combinations and graphical presentations of the data.

The most used keywords in Ecolinguistic

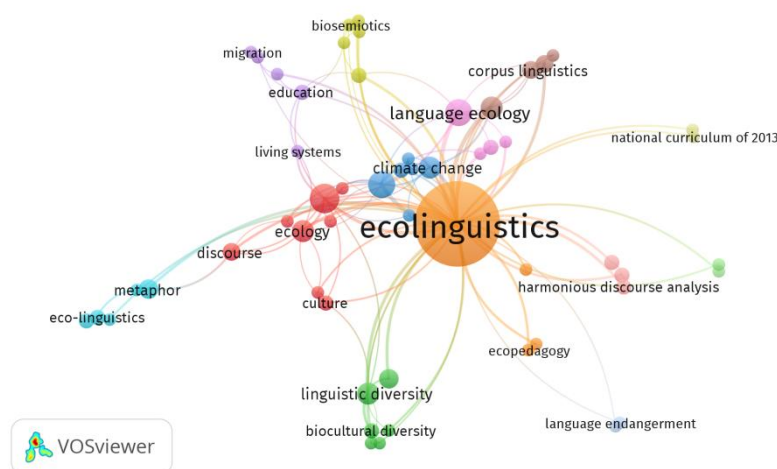


Figure 1 Network Visualization

In this part, the researcher studies the content by analyzing the distribution of keywords. The keywords co-occurrence network map, the top 10 keywords in Ecolinguistic publications, the keywords density visualization map, and the keywords timeline view will be shown. Keywords co-occurrence can effectively reflect the research hotspots in the discipline fields, providing additional support for scientific research (Huajiao Li, Haizhong An, et al.). Based on the visual data above, a minimum number of occurrences of a keyword is 2 of the 629 keywords; there are 59 that meet the threshold. The total strength of the co-occurrences links with other keywords will be calculated for each of the keywords. The keywords with the greatest total link strength will be selected. The number of keywords to be selected is 59. Figure 1 shows that thirteen central clusters can be identified from 56 items. The largest cluster (red color) includes eight items such as "culture", "discourse", "ecology", "environment", "language", "linguistic", "nature", and "positive discourse analysis". Ecolinguistics has been referred to as '...an 'umbrella term,' covering a rich diversity of theoretical approaches. (Bundsgaard and Steffensen, 2000: 9). Within this contemporary perspective, linguistic research is associated with issues and particularities proper to the new millennium. In this respect, two sorts of ecological studies are asserted; eco-critical discourse analysis and linguistic ecology.

The keyword used in this research article is Ecolinguistic. As seen from the network visualization of co-occurrence (figure 1), Language ecology and linguistic diversity are the most frequently explored topics in Ecolinguistics. Research on Ecolinguistic, linguistic ecology diversity, and so on is still little researched. Thus, the trend topics to be researched in Ecolinguistics are those that are still little researched.

According to a study, Web of Science is a superior database to Scopus. According to (Md Khudzari et al., 2018), Web of Science's search results, for example, automatically display the most popular articles in the field

thanks to a feature known as 'hot paper,' which is still missing in Scopus. According to this recent study, Scopus has that feature as well. As a result, WoS and Scopus both have excellent databases.

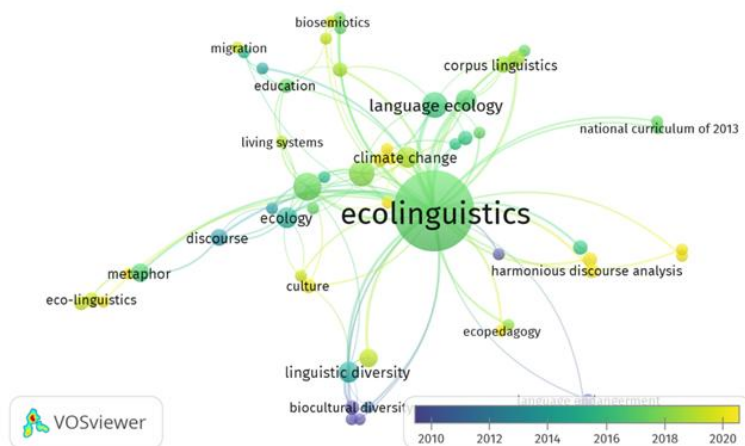


Figure 2 the distribution of Ecolinguistic using the keywords by years

Based on the data above, it can be said that Ecolinguistic studies have started to increase in 2010, although the first study was published in Scopus in 1987. When the distribution of the keywords by years is analyzed, the studies mainly focused on the harmonious discourse analysis, ecopedagogy, ecolinguistic, culture, and climate change. The distribution of the keywords by year is presented in Figure 2. The emergence of ecolinguistics (Haugen, 1972; Halliday, 1990; Fill and Mühlhäusler, 2001) has brought language study into a new domain where linguists are concerned with ecosystems and exploring them the new ways of studying language ecologically. Faced with the widespread deterioration of the natural environment, ecolinguists have taken on the social responsibility of applying linguistics and other disciplines to help solve environmental problems or offer alternatives to studying the relationship between language and ecology. In ecolinguistics, “a central approach” (Alexander and Stibbe, 2014: 104) is that of eco-discourse analysis. The eco-discourse analysis involves the analysis of ecological discourse, in other words, discourse that directly reflects ecological problems such as air pollution and loss of biological diversity; this has also been extended to the ecological analysis of various other types of discourse that may have consequences for the ecosystem. Discourse is an ideal point of departure for understanding language as a social activity that can either confirm or criticize social praxis. In examining the impact of language on the relationship between humans and the ecosystem, ecolinguists often take as their primary focus discourse that directly reflects ecological problems. However, it is a misunderstanding to see such discourse as the sole or even “primary” concern of ecolinguistics (Alexander and Stibbe, 2014: 108). Alexander and Stibbe suggest expanding research to cover “discourses, any discourses, within an ecological framework, rather than simply analysing discourses which happen to be about the environment” (Alexander and Stibbe, 2014: 109). Therefore, rather than focusing on the analysis of ecological discourse, ecolinguistic studies should include the ecological analysis of such discourse as “animal industry handbooks, lifestyle magazines, and economics textbooks” because they “fail to mention environmental or ecological considerations that are so potentially damaging to those systems” (Alexander and Stibbe, 2014: 108). Based on figure 2, the harmonious Discourse Analysis is a new trend from the Ecolinguistic approach in 2020.

The Most Cited-Authors

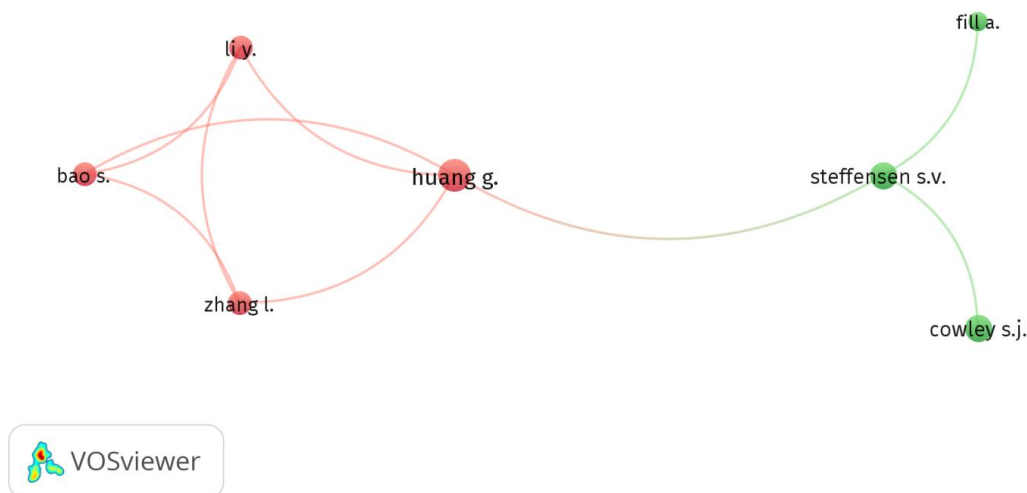


Figure 3 The most cited authors (citation analysis)

In order to create the map for the most-cited authors, citation analysis and authors were selected. The maximum number of author documents is 25, the minimum number of documents of authors is 2 of the 250 authors, so the number of authors to be selected is 35. The created map is displayed in Figure 3. It shows that Steffensen S.V. (Document=4, Citations=108), Fill (Document=4, citations=82), Cowley S.G (Document=4, citations=22), Huang G. (Document=6, citations=8), Li. y (Document=3, citations=4), Bao. s (Document=3, citations=4), Zhang l (Document: 3, citations=4) are the most-cited authors in this field. In addition, according to Einar Haugen, at the beginning of the 1970s, defined “ecology of language” and “language ecology” as “the study of interactions between any given language and its environment” (Haugen, 1972: 325). Since the end of that decennium, ecolinguistics has been defined as studying “the (inter-)relationships between language and (its) environment”. Ecolinguistics is a relatively new discipline. According to Makkai (1993: 8), it “is merely in status nascendi and has a long way to go before it can fulfill any of its own goals and aspirations”. Nowadays, this seems not to be valid anymore. The simple fact that we are dedicating a volume of this journal to it is proof of the contrary. Indeed, it is not a unified enterprise. However, there are many points of view which, in my opinion, are a sign of its vitality.

Fill (1996: 17) pointed out that “some ecolinguists start at the ecology end and transfer ecological principles to language, while others start at the language end and bring linguistics to ecology”. This means that ecolinguistics is intimately intertwined with ecology one way or the other. Unfortunately, in both ways, ecolinguists run the risk of reifying language, i.e., of considering it a thing located somewhere and related to its environment. However, if we depart from the central concept of ecology, ecosystem, we have a way out of this reification. The ecosystem consists of a population of organisms living in their territory (environment) and the inter-relationships that obtain between the organisms and the environment and between members of the population. One of the most critical features of any ecosystem is the diversity of species living in it. The greater the diversity, the stronger the system is. Let us now turn to some of the linguistic homologs of these ecological concepts.

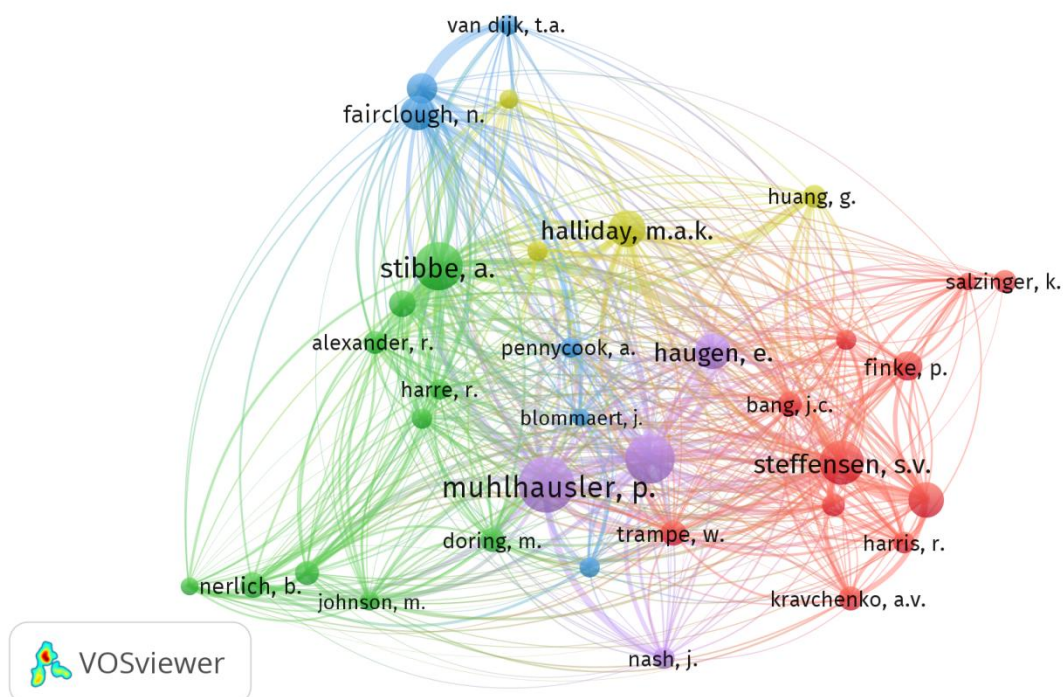


Figure 4 . The most cited authors (co-citation analysis)

In addition, co-citation analysis and cited authors were selected. The minimum number of authors was adjusted as 20 of the 6473 authors. The authors with the greatest total link strength will be selected as much as 35 of the number of authors to be selected. The created map is shown in Figure 4. It shows that Muhlhauser, P (Citations=180), Steffensen, S.V. (Citations=117), Stibbe (Citations=137), Fairclough, N (Citations=67). are the most-cited (co-citation) authors in this field. The fact that language includes a wide range of concepts and the fact that it enters into almost every aspect of human life makes the application of linguistic analysis of a broad type. This human means of interaction can be speculated from different standpoints. Ecolinguistics is the study of language according to the environment it is used in. The term emerged in the 1990s as a new paradigm of language study that speculates the intra- relations, inter-relations, and extra-relations of language and environment and combinations of these relations. This new trend in the conceptualization of human language eventually leads to linguistic criteria to overlap with many other aspects that correlate with linguistic behavior.

The most cited countries

In order to create a map for the most-cited countries, citation analysis and countries were selected. The minimum number of documents of a source was adjusted as one, and the minimum number of citations of a country was stated as 46. The number of countries to be selected was automatically stated as 46. The created map is shown in Figure 5. It shows that the most-cited countries in which the authors are employed are the United Kingdom.

No	Countries	Document	citations	Total link strength
1	United Kingdom	15	185	45
2	Australia	16	159	12
3	Austria	4	121	50
4	china	22	19	36
5	germany	9	46	36
6	United states	22	43	36
7	australia	16	159	12
8	canada	3	16	28
9	Russian federation	6	14	12
10	indonesia	14	8	11

Figure 5 table top 10 most citations countries

When the distribution of the number of studies in countries by years is evaluated, the studies have been primarily published in the United Kingdom, Australia, and Austria. In addition, it is observed that the studies started in 2012, mainly in Australia, Brazil, and France. The distribution of the citations of the studies in countries by year is presented in Figure 6.

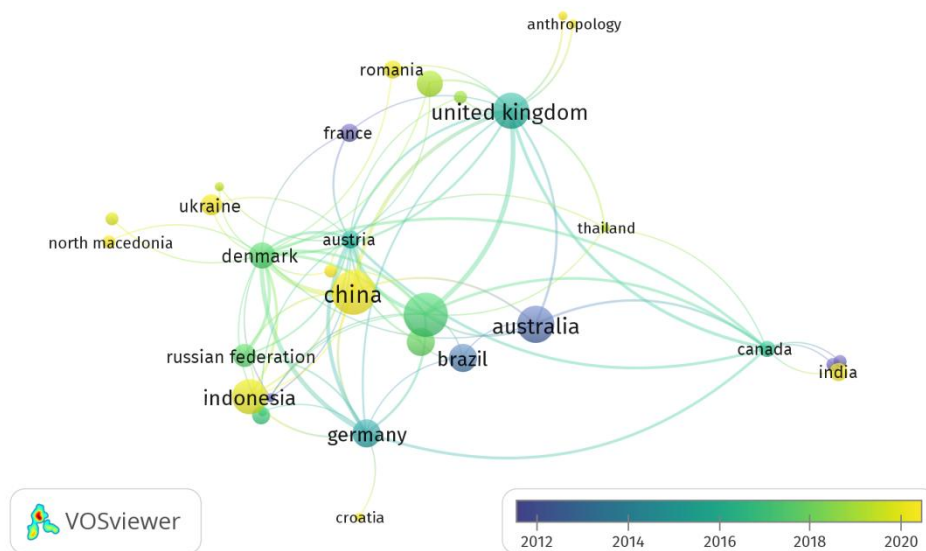


Figure 6 The most cited countries

Based on the picture above, with the following countries (figure 7), the United Kingdom and Australia have the most significant Ecolinguistic publications compared to 44 other countries. However, based on the network visualization of co-authorship countries, it shows that the Ecolinguistic publications from the two countries were from 2016 (Purple nodes) to 2018 (Blue nodes) while the country with the minor Ecolinguistic publication was in 2020 to date (see yellow nodes). The network visualization of countries co-authorship above is set with a minimum number of documents of a country are 1 of the 46 countries with 9 clusters. By the explanation above, it can be said that The most productive countries to cite the Ecolinguistic research articles, books, and proceedings are the United Kingdom, Denmark, and Australia, as shown in the Network visualization of countries citation (figure 6).

IV. CONCLUSION

Ecolinguistics is a relatively new discipline. Nowadays, this seems not to be valid anymore. The simple fact that we are dedicating a volume of this journal to it is proof of the contrary. Indeed, it is not a unified enterprise. However, there are many points of view which, in my opinion, are a sign of its vitality. VOSviewer is a software tool for constructing and visualizing bibliometric networks. These networks may, for instance, include journals, researchers, or individual publications, and they can be constructed based on citation, bibliographic coupling, co-citation, or co-authorship relations. Based on the result and discussion above, the researcher can be concluded that the United Kingdom and Australia are the two countries with the most significant Ecolinguistic publications compared to 44 other countries. However, based on the network visualization of co-authorship countries, the Ecolinguistic publications from the two countries were from 2016 to 2018. The country with the minor Ecolinguistic publication was from 2020 (see yellow nodes). The network visualization of countries co-authorship above is set with a minimum number of documents of a country are 1 of the 46 countries with 9 clusters.

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