

## BIBLIOMETRIC ANALYSIS OF INDIGENOUS ENTREPRENEURSHIP

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### **Abstract**

*Today, indigenous peoples play an essential role in local development, maintaining communities, and promoting heritage sites. In particular, indigenous entrepreneurship has long been the focus of a range of initiatives, efforts, and programs at the local and national levels in the context of globalization. These programs aim to support and develop the whole locality. Bibliometric analysis was performed in this paper to obtain a structural overview and assist researchers in better understanding the characteristics of indigenous entrepreneurship research. By using the bibliographic analysis software VOSviewer, 225 indigenous entrepreneurship documents were analyzed from Scopus's database collection in publications from 1973 to 2021. These publications are used in the analysis of the article. In more detail, comprehensive overviews of the field related to indigenous entrepreneurship, such as the production of publications over time, subject areas of researchers, most influential countries, and research directions through keywords. The paper's research findings have provided a valuable and significant reference for researchers and practitioners in the research communities related to indigenous entrepreneurship.*

**Key words:** *entrepreneurship; bibliometric analysis, indigenous entrepreneurship; VOSviewer.*

**JEL Classification:** *M10, M13*

### **I. INTRODUCTION**

Over the years, indigenous peoples around the world have suffered from many consequences from shifting economic forces, advanced technology, encroachment of population centers, and socio-cultural acculturation and colonial expansion (Peredo, Anderson et al., 2004). With autonomy and social cohesion, indigenous communities have continued to suffer in different degrees about geographical and population disparities (Peredo, Anderson et al., 2004). For this reason, indigenous peoples, along with other poorer peoples around the world, have long been the target of a wide range of initiatives, efforts, and programs to support economic development (Peredo, Anderson et al., 2004). These initiatives are increasingly directed towards the further goal of improving socioeconomic status from the leadership of the indigenous peoples themselves (Peredo, Anderson et al., 2004). As a result, the purposes of indigenous leaders are to reconstruct and improve their socioeconomic status (Harvey, 1996; Peredo, Anderson et al., 2004).

Many indigenous people consider entrepreneurship a central factor in supporting this effort (Peredo, Anderson et al., 2004). Entrepreneurship and entrepreneurship development are widely accepted as keys to building a more vibrant economy leading to national reconstruction (Anderson and Giberson, 2004). The forms of business can vary considerably, from the widespread collective efforts of the New Zealand Maori people (Frederick and Henry, 2004) to individual forms of business ranging from board casino games of Kumeyaay bands in California (Galbraith and Stiles, 2003). Either way, entrepreneurship remains at the heart of local economic development. These enterprise-related activities are an example of an appreciable type of activity known as "indigenous entrepreneurship" (Peredo, Anderson et al., 2004). Thus, indigenous entrepreneurship plays an essential role in local development strategy as well as national development. It is through indigenous entrepreneurship that countries can solve current problems and bring prosperity to their indigenous peoples.

This paper intends to provide a macro overview of the main characteristics of scientific publications on indigenous entrepreneurship based on bibliographic analysis. The informative images presented in this paper demonstrate the research achievements in the field of indigenous entrepreneurship. From there, it can help researchers and practitioners identify baseline impacts from authors, journals, countries, institutions, references, and research topics. The paper is structured into the following sections: the first section provides a literature review that outlines the concepts and characteristics of indigenous entrepreneurship. The next part is the research method. In this part, the author explains the research method used in the paper, the main steps in performing the analysis, and a brief description of the research method. The third section covers the results of the study with statements of some aspects of the findings obtained. The final section discusses the results and intends to provide a summary of the findings and implications, limitations of the study, and directions for future research.

## II. LITERATURE REVIEW

In recent times, indigenous entrepreneurship studies are attracting both indigenous and non-indigenous scholars (Peredo and Anderson, 2006). It demonstrates the importance of indigenous entrepreneurship research. Indigenous entrepreneurship studies are essential for at least two reasons. Firstly, there is increasing recognition and acceptance that indigenous peoples are the original owners of land and natural resources. It led to the establishment of indigenous businesses (Lindsay, 2005). Secondly, indigenous entrepreneurship offers the potential to unlock economic wealth and facilitate empowerment and prosperity for a marginalized population (Lindsay, 2005). In addition, indigenous entrepreneurship has the potential in the long term to reduce the dependence of some indigenous peoples on welfare payments. Since then, many governments have viewed indigenous entrepreneurship as at least a partial solution to current problems (Lindsay, 2005). Developing a better understanding of the differences between indigenous and non-native startups can lead to entrepreneurial education, training, and development programs. These programs are more relevant, more culturally sensitive, and reflect the approach to economic development desired by indigenous communities (Lindsay, 2005).

Analyzing a short literature review over the years, we were able to identify research characteristics of indigenous entrepreneurship from different perspectives. Some authors attribute the development of indigenous entrepreneurship to cultural and community characteristics (Robinson and Ghostkeeper, 1987; Anderson, Giberson et al., 2004). Indigenous culture will be strengthened and maintained through indigenous entrepreneurship and entrepreneurship in different ways (Hindle and Moroz, 2010). Additionally, the emphasis on community is perhaps the most distinctive aspect of indigenous entrepreneurship (Garsombke and Garsombke, 2000; Hindle and Moroz, 2010). Meanwhile, some other authors study the role of indigenous entrepreneurship in promoting and creating jobs for local communities, reducing dependence on government funding, and increasing increased control over their future (McBride, 2004; Collins and Norman, 2018). In addition, indigenous entrepreneurship can contribute to larger projects of community self-governance, improving the economic, social, and cultural well-being of communities (Henderson, 2018). It clearly shows that research on indigenous entrepreneurship is being attended. Furthermore, it has since led to an increase in the development of indigenous entrepreneurship literature, including ongoing research in scholarly journals, books, and conference proceedings.

After analyzing these articles, we find that, in the specialized literature, there have been different approaches to studying the topic of entrepreneurship over time (for example, case studies, the questioning of expert groups, quantitative or qualitative analysis, etc.). However, there are currently no studies using bibliometric analysis to analyze the problem of indigenous entrepreneurship. This article intends to provide an overview of the main characteristics of indigenous entrepreneurship publications based on bibliometric analysis. Regarding the uniqueness of this paper, to the author's knowledge, this is the first study to analyze indigenous entrepreneurship based on a text mining approach.

## III. DATA AND RESEARCH METHOD

### 3.1. Aim of the Research

The purpose of this study is to identify research trends on indigenous entrepreneurship in recent times through the bibliometric method.

### 3.2. Research Method

The bibliometric method was chosen to be used in the article to research scientific knowledge based on statistical tools, to identify publications related to the research area. The bibliometric method is preferred to investigate the latest research status and trends on a particular topic. It includes the number of articles, geography, journal distribution, subject area, authors and effective organization, academic collation, and article citations (Hearst, 2003; Yu, Wei et al., 2016). Bibliometric methods have been widely used to analyze academic publications or literature (Bellis, 2009; Ellegaard and Wallin, 2015; Cicea, 2020). For implementing the research method, the paper used VOSviewer software to conduct the analysis. VOSviewer software is developed by Van-Eck and Waltman (2011), and it is a text mining software used to visualize similarities between different objects. Therefore, in this study, the author used VOSviewer software to conduct the evaluation and analysis.

### 3.3. Data collection from Scopus

Currently, there are many different scientific databases in the world. The analytical data used in this article was extracted from the Scopus database on November 15, 2021. Scopus is one of the most famous and prestigious databases in the world today. The Scopus database is provided by Elsevier. Currently, the Scopus

database has a high volume of publications (nearly 70 million documents) (Cicea, 2020). Besides, the Scopus database is used by many scientists to evaluate documents related to research problems (Cicea, 2020). In addition, the analysis of data from the Scopus database is also more straightforward and more convenient than other databases (Trinh and Cicea, 2020). Therefore, the author decided to use the Scopus database for this study.

The author collects and filters data from the Scopus database. In the first step, the author used the search engine of the database to search data. The keywords used here are “indigenous entrepreneurship”, “indigenous entrepreneur” and “indigenous enterprise” in the titles, abstracts, and keywords of the publications. The results of step 1 show that there are 247 documents extracted and collected until November 2021. Then, the author has re-filtered the collected data by restricting documents that are not English documents. In addition, the author only selects documents that are Conferences Proceedings, Articles, and Books to ensure the scientificity of the database (other misleading factors are removed). The number of documents is reduced to 225 documents after data filtering. In the end, a total of 225 papers were used to analyze the current state of indigenous entrepreneurship research.

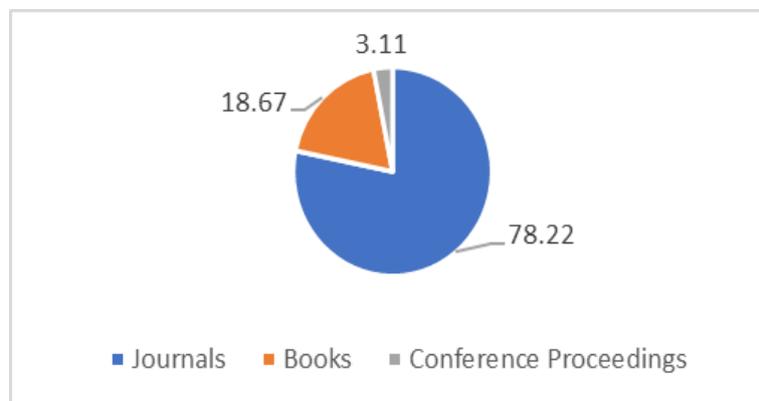
**3.4. Data Analysis**

After creating the database, the authors analyzed the scientific literature regarding the influence of communities on local development. Analysis was performed using the data provided by the Scopus database through VOSViewer 1.6.17 software. The analysis considered several aspects, including the category and distribution of scientific studies, time, scientific term, country, research background, etc., of the database, collected based on the bibliometric method. From there, there are significant perspectives for researchers and future trends.

**IV.RESULTS AND DISCUSSION**

**4.1. Editing and publishing analysis**

**Analysis by type**



**Figure 1 - Documents by types**

Source: Author own conception based on Scopus database

For all kinds of documents, out of 225 publications used for analysis, articles have the biggest number of publications (up to 78.22%, with 176 articles in journals). Next are the book and book chapters at 18.67% (42 documents), and the Conference proceedings (7 publications) account for 3.11%. The specific results are shown in figure 1.

**Analysis by subject area**

Regarding the number of publications by subject area, the publications cover 14 different scientific categories. In which, “Business, Management, and Accounting” accounted for the highest percentage (with 143 publications, accounting for 63.56%) and the end was Multidisciplinary with the lowest rate (with one article, accounting for 0.44%). Specific results are presented in Table 1. In general, most of the studies related to indigenous entrepreneurship are in the fields of Economics and Social sciences. It should be noted that an article can be classified into many different subject areas.

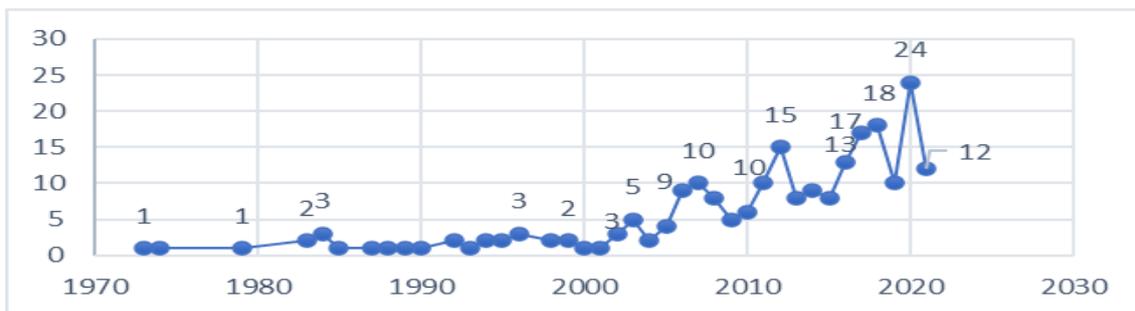
**Table 1: Number of documents by subject area (more than 5 publications)**

Ranking	Subject Area	Number of documents	Percent (%)
1	Business, Management and Accounting	143	63.56
2	Economics, Econometrics and Finance	86	38.22
3	Social Sciences	83	36.89
4	Arts and Humanities	18	8.00
5	Environmental Science	18	8.00
6	Earth and Planetary Sciences	8	3.56
7	Energy	8	3.56
8	Engineering	6	2.67

Source: Author own analysis based on Scopus database

**Analysis by time**

Regarding the distribution over time, it should be noted that the number is increasing, starting with one publication corresponding to 1973 and ending with 12 publications corresponding to 2021, the number of publications reaching value a maximum of 24 in 2020. In addition, this increase has been much higher in the past time. From 1973 to 2000, there were 1 to 3 scientific articles per year. After 2000, there was an increase in Articles, Conference Proceedings, and Book chapters dealing with indigenous entrepreneurship issues. The situation of the change in the number of publications is shown in Figure 2. Looking at the results in Figure 2, we can see that the number of articles related to indigenous entrepreneurship is not too much compared to other research fields. The maximum number of publications is 24 articles in 2020. The increase in the number of scientific articles registered after 2000 is due to the increasing interest of researchers in this field, the expansion of the Internet, and the popularity of databases (thus, the number of journals indexed in different databases has increased). In addition, the increase of articles has not been stable, with some years increasing sharply but in other years tending to decrease, which shows that the interest of researchers in this field is not high.

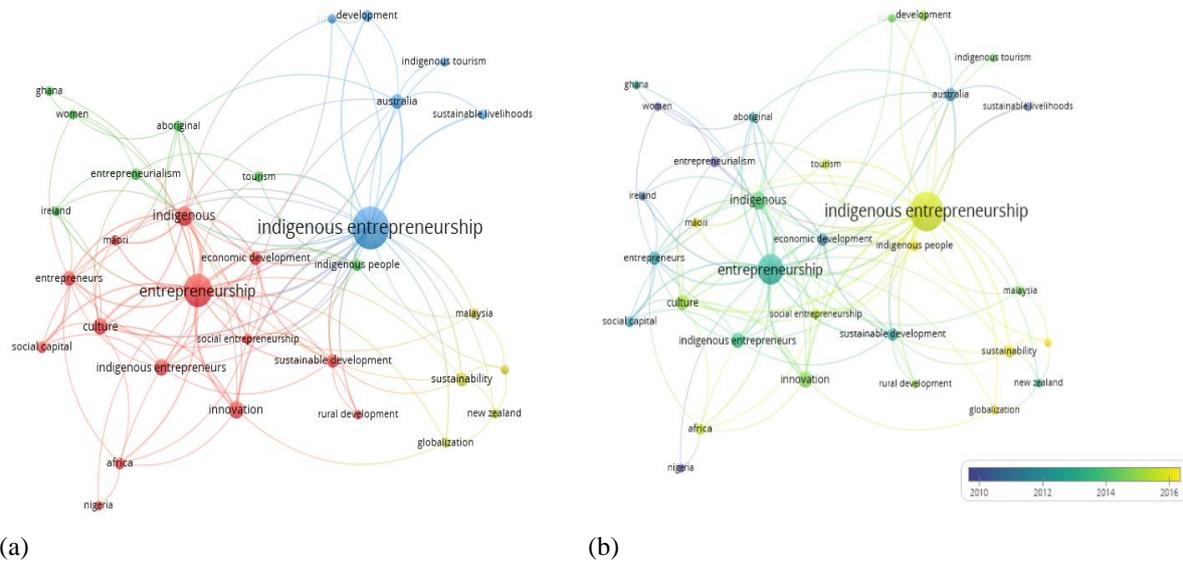


**Figure 2 - Number of documents by years**

Source: Author own analysis based on Scopus database

**4.2. Analysis by Keywords and Co-keywords**

To analyze the relationship between keywords in the database, the author used VOSviewer software for analysis. This software analyzes keywords in the analyzed scientific results, identifying similarities, patterns, and interdependencies between the various analyzed variables. A total of 588 related keywords were used in 255 documents selected through the Scopus database. The co-occurrences threshold of the keywords was set at 3. 32 keywords were extracted for analysis. The results of the association between the keywords are shown in figure 3.



**Figure 3 - Co-keyword network visualization on indigenous entrepreneurship research.**

Note: (a) Co-keyword network visualization was based on occurrences; (b) Co-keyword overlay visualization was based on the occurrences and average publication per year scores.

Source: Author own analysis based on VOSviewer

The results in figure 3a show the occurrence and relationship between the keywords. From there, the keywords indigenous entrepreneurship and entrepreneurship were identified with the most occurrences in documents about indigenous entrepreneurship. The keywords are arranged in 4 different clusters according to many colors. The remaining keywords were identified as factors related to indigenous entrepreneurship, such as indigenous, indigenous entrepreneurs, etc. As is shown in figure 3b, the color was used to represent the time-varying keyword occurrences from 2010 to 2018. Recently, the keywords that often appear in the research of indigenous entrepreneurship are sustainability, globalization, tourism, indigenous people.

In more detail, Table 2 provides the link and link strength information of the top 11 occurrence keywords (occurrences >5). The "Links" column shows the number of links a keyword has with another word. Thus, the keyword "indigenous entrepreneurship" has 26 links to other keywords. In addition, the total link strength indicates the number of publications in which two keywords occur together. The results in Table 2 show that "indigenous entrepreneurship" and "entrepreneurship" are the two keywords with the strongest link, total link strength, occurrences. In addition, the results in Table 2 also show that the keywords that are hot in the research are "indigenous entrepreneurship", "sustainability", "innovation", and "culture".

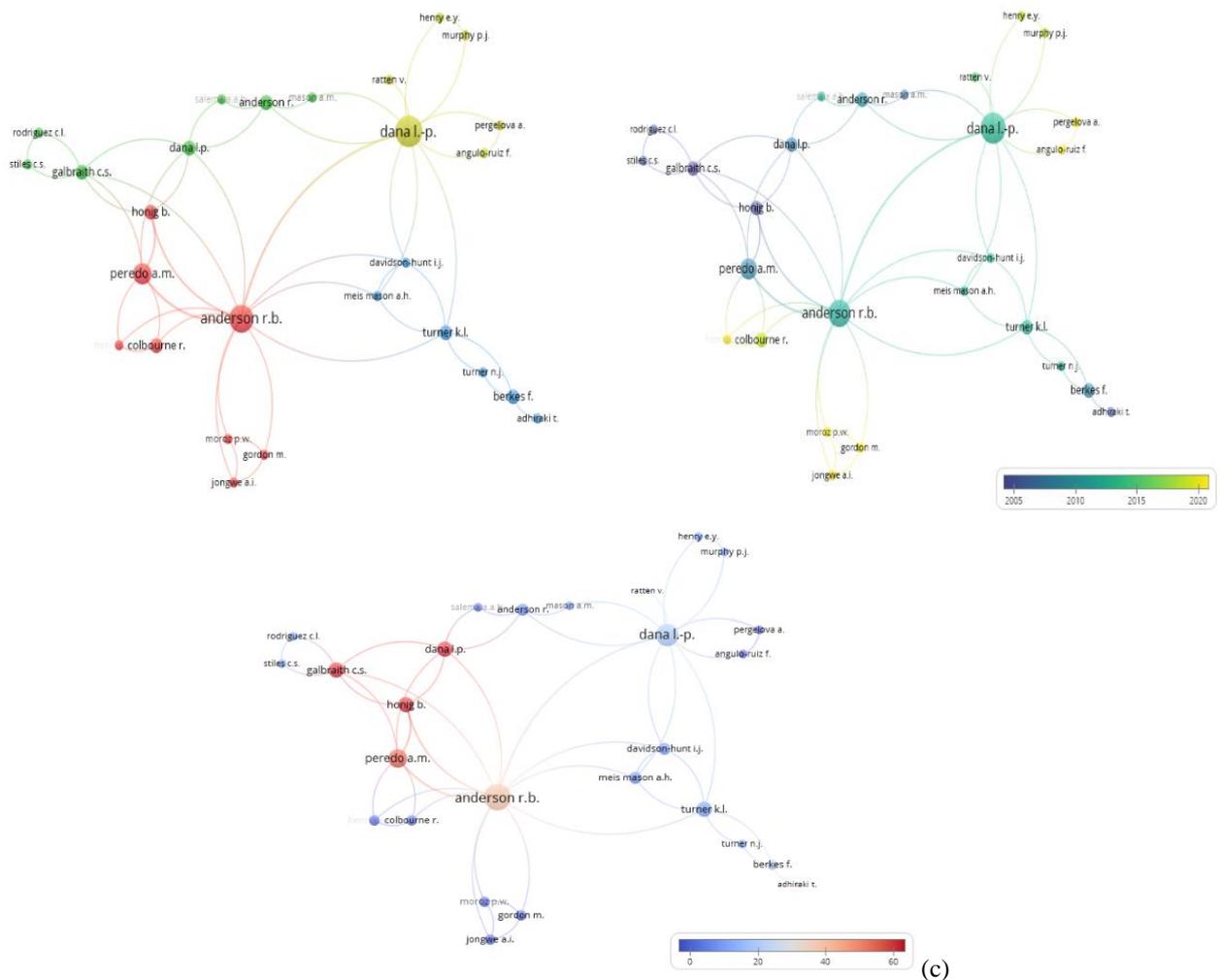
**Table 2: The link and total link strength of top 11 occurrence keywords**

Ranking	Keywords	Cluster	Occurrences	Total link strength	Link	APY
1	Indigenous entrepreneurship	3	58	51	26	2015
2	Entrepreneurship	1	36	60	25	2012
3	Indigenous	1	13	29	14	2013
4	Innovation	1	10	17	8	2014
5	Culture	1	9	19	11	2014
6	Indigenous entrepreneurs	1	9	11	10	2013
7	Australia	3	7	13	9	2011
8	Entrepreneurs	1	7	14	11	2011
9	Economic development	1	6	13	7	2011
10	Sustainability	4	6	7	6	2015
11	Sustainable development	1	6	11	8	2012

Note: Cluster number in Figure 3a; APY: average publication year in Figure 3b

Source: Author own analysis based on VOSviewer

4.3. Co-authorship Visualization Analyses



**Figure 4 - Authors co-operation network on indigenous entrepreneurship research.**

*Note: (a) network visualization was based on author link-weights; (b) overlaid visualization was based on document-weights and average publication years scores; (c) overlay visualization based on author link-weights and citation scores.*

Source: Author own analysis based on VOSviewer

Statistical results show that a total of 388 authors have researched indigenous entrepreneurship. However, in which, only 33 authors published two articles (8.5%), 11 authors published three articles (2.83%), and seven authors published more than three articles (1.8%). The remaining authors only have 1 article. This result shows that not many authors have in-depth research on indigenous entrepreneurship. When creating author data based the co-authorship map, the threshold value was set at 1. However, there were only 27 item analyzed because many authors were not connected with the other author in the network. Figure 4a shows the link between the authors. The authors are divided into four different clusters, and these clusters are interconnected. Featured authors are Dana I.-p, Anderson r.b, and Peredo a.m. Figure 4b shows the publication time of the authors. Through the results in figure 4b, we can see that the well-published authors are those who have been publishing for quite some time in the past. In the current period are new authors with fewer publications. And these authors all have links to the great authors mentioned above, Dana I.-p, Anderson r.b, and Peredo a.m. In figure 4c, the level of citation has been shown. Authors Dana I.p., Peredo a.m., Galbraith c.s, and Hong b. are the authors with the highest citation scores, although the authors are not published in large numbers.

The results in Table 3 describe the statistics of the Top 7 strong co-authorship-linked document-productive authors. In Table 3, it can be seen that the research authors have published before 2012. This result shows that the study of indigenous entrepreneurship has not yet received much attention and consideration. Other authors are just authors of prima research into indigenous entrepreneurship.

**Table 3: Top 7 strong co-authorship linked document-productive authors**

Ranking	Authors	Documents	Citations	Total link strength	Link	AC	APY
1	Dana l.-p.	9	181	5	11	20	2012
2	Anderson r.b.	7	263	12	13	37	2011
3	Peredo a.m.	4	220	8	6	55	2008
4	Dana l.p.	2	156	5	6	78	2008
5	Galbraith c.s.	2	165	4	6	82	2005
6	Honig b.	2	180	6	4	90	2005
7	Turner k.l.	2	20	3	6	10	2012

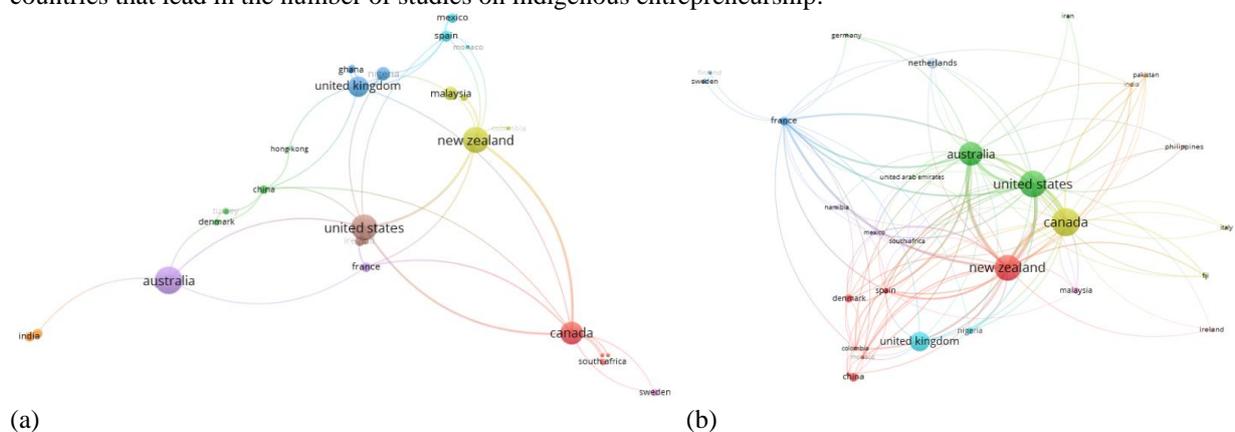
Note: AC: average citations in figure 4; APY: average publication year in Figure 3b

Source: Author own analysis based on VOSviewer

**4.4. Analysis by countries/regions**

**Co-author visualization map of countries/regions**

Figure 5a depicts a Co-author visualization map of countries/regions through VOSviewer software. In the process of mapping figure 5, the minimum threshold of a country was set at 1, because there are a few countries that have publications for indigenous entrepreneurship. There were 30 countries/regions out of 45 countries listed as visualization items. The results in figure 5a show that the countries with the largest document weights are the United States, Canada, New Zealand, United Kingdom, and Australia, respectively. These are the countries that lead in the number of studies on indigenous entrepreneurship.



**Figure 5 – Countries/regions network on indigenous entrepreneurship research**

Note: (a) Co-author visualization map of countries/regions based on document weight; (b) Citation visualization map of countries/regions based on citation weight

Source: Author own analysis based on VOSviewer

Citation visualization map of countries/regions shows a co-citation relationship between countries/regions. The results of the citation visualization map are shown in figure 5b. The minimum document threshold of a country was set at 1. The results show a strong relationship among the countries that are Australia, the United States, Canada, New Zealand when these countries are located very close to each other. In addition, these countries have a much higher citation than the rest. The detailed characteristics of countries for research on indigenous entrepreneurship are shown in Table 4. Australia remains the leader in the number of studies on indigenous entrepreneurship. However, recent studies are on Spain, while other countries have been doing research on indigenous entrepreneurship for a long time.

**Table 4: Top 8 countries/regions with research on indigenous entrepreneurship**

Ranking	Countries	Documents	Citations	Total link strength	Link	APY
1	Australia	40	444	6	5	2013
2	New Zealand	34	534	19	8	2012
3	United States	34	573	18	9	2010
4	Canada	28	619	19	10	2012
5	United Kingdom	22	294	11	8	2010
6	Malaysia	9	39	3	3	2014
7	Nigeria	9	35	5	3	2009
8	Spain	7	26	8	6	2016

Source: Author own analysis based on VOSviewer

**4.5. Analysis by journal publications**

For indigenous entrepreneurship publications, there were a total of 225 documents in 149 different



tools can be used to analyze research trends of indigenous entrepreneurship. From there, many results and conclusions can be compared.

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