

## **Análise bibliométrica sobre a produção científica relacionada a empreendedorismo feminino**

### **Analysis on scientific production related to female entrepreneurship**

## **Análisis bibliométrico de producción científica relacionada con el emprendimiento femenino**

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### **Resumo**

A pesquisa tem como objetivo apresentar uma análise bibliométrica de publicações científicas sobre empreendedorismo feminino, sendo que foi realizada uma busca na base de dados on-line Scopus com as palavras-chave “female entrepreneurship” no campo “Article Title, Abstract, Keywords”. Os resultados indicam um crescimento na produção de artigos voltados a empreendedorismo feminino, dando ênfase aos Estados Unidos como país que possui o maior número de publicações sobre o tema. Dessa forma, a análise dos artigos possibilitou identificar que este tema vem crescendo ao longo dos anos, bem como a mulher vem se destacando no cenário mundial por meio da criação de novos negócios que possibilitam o crescimento da economia de um país.

### **Palavras-Chave**

Empreendedor; Mensuração; Produção Científica; Negócios.

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## Abstract

The research aims to present a bibliometric analysis of scientific publications on female entrepreneurship, and a search was made in the online database Scopus with the keywords “female entrepreneurship” in the field “Article Title, Abstract, Keywords”. The results indicate an increase in the production of articles aimed at female entrepreneurship, emphasizing the United States as the country with the largest number of publications on the subject. Thus, the analysis of the articles made it possible to identify that this theme has been growing over the years, as well as women have been standing out on the world stage through the creation of new businesses that enable the growth of a country's economy.

## Keywords

Entrepreneur; Measurement; Scientific production; Business.

## Resumen

La investigación tiene como objetivo presentar un análisis bibliométrico de publicaciones científicas sobre emprendimiento femenino, y se realizó una búsqueda en la base de datos online Scopus con las palabras clave “emprendimiento femenino” en el campo “Título del artículo, Resumen, Palabras clave”. Los resultados indican un aumento en la producción de artículos dirigidos al emprendimiento femenino, destacando a Estados Unidos como el país con mayor número de publicaciones sobre el tema. Así, el análisis de los artículos permitió identificar que esta temática ha ido creciendo a lo largo de los años, así como las mujeres se han ido destacando en el escenario mundial a través de la creación de nuevos negocios que posibilitan el crecimiento de la economía de un país.

## Palabras clave

Empresario; Medición; Producción científica; Negocio.

## Introduction

The entrepreneurship corresponds to the process that impacts the economic development of a country, as it provides the creation of new businesses that contribute significantly to the generation of jobs and income (Carrijo & Ferreira, 2017).

In recent years women have been gaining more space in different professional areas, and this growth also occurs in the development of their own businesses, ie, this evolution comes in the field of entrepreneurship. In Brazil, the Global Entrepreneurship Monitor - GEM 2013 identified that the number of new entrepreneurs was higher than that of entrepreneurs (Teixeira & Bomfim, 2016).

In this research, the use of scientific indicators enables the analysis of the production of articles aimed at female entrepreneurship. Also, bibliometrics allows us to analyze the scientific production of a given theme, helping in the development of future research.

It is important to highlight that bibliometrics allows the production of relevant indicators for the treatment and management of information and knowledge, which favors the evaluation of scientific production on a given theme (Guedes, 2012).

Given this, the research aims to present a bibliometric analysis of scientific publications on female entrepreneurship.

## Female Entrepreneurship

In recent years, there is a movement of change with the increasing participation of women in the labor market, highlighting a balance in the business environment of men and women, as well as the growth of women in entrepreneurship (Martins et al., 2010 ).

In addition, female entrepreneurship has been gaining ground in Brazil and in

different countries, showing that women are increasingly occupying space in companies and as entrepreneurs in various industries (Frota et al., 2014).

Regarding women in the labor market, for Gomes, Guerra and Vieira (2011), women have been motivated to develop their potential as entrepreneurs, due to the need to be divided into different roles and the difficulty of rising their career.

Still, it is understood that women began to increase their space in the country's economy and their participation in the business world not only within existing organizations, but also due to the creation of their businesses (Franco, 2014).

According to Carrijo and Ferreira (2017), women have assumed a significant role within organizations, and in Brazil, in 2014, 52% of new businesses were created by women.

In turn, Franco (2014) explains that female entrepreneurship has been growing, and due to the business experiences developed by women, several studies have been conducted to highlight the characteristics of these entrepreneurs.

Finally, female entrepreneurship has been developing over the years, showing that women have become an active figure in different countries in the development of new businesses, which also enables the growth of a country's economy and job creation.

### Bibliometrics

The bibliometrics is a statistical technique that seeks to measure the aspects of academic production, and allows understanding the structure and characteristics of the relationship between authors, institutions and between subjects through keywords (Medeiros & Vitoriano, 2015; Francisco, 2011 ).

This technique emerged in the early twentieth century to meet the need to analyze studies and evaluate scientific production and communication (Marcelo &

Hayashi, 2013).

Bibliometric studies can contribute to the systematization of research that is developed in a particular area and address problems that can be examined in future research (Chueke & Amatucci, 2015).

Also, bibliometrics is a research methodology for scientific and related activities, which through data analysis allows the identification of the amount of work on a specific subject, which was published on a certain date or published by an author or an institution or a scientific journal (Kobashi & Santos, 2008).

It allows the analysis of scientific production and depends on appropriate organizational processes. They are used to support productivity assessment and processes to establish funding policies that involve resource allocation (Pinto & Matias, 2011).

In addition, it enables the construction of indicators that are intended to evaluate the scientific production of individuals, as well as areas of knowledge and countries, which allows the analysis of both production and scientific performance, and the treatment and management of information and knowledge. (Silva; Hayashi & Hayashi, 2011; Guedes, 2012).

This technique is an important instrument for analyzing scientific activity and relations with economic and social development, and can portray the behavior and development of a knowledge area, having a significant role in the analysis of a country's scientific production (Kobashi & Santos, 2008; Araújo & Alvarenga, 2011).

The main bibliometric laws are Bradford's Law, Lotka's Law and Zipf's Law. Table 1 presents the laws of bibliometrics.

Table 1 - Laws of Bibliometrics

Laws	Measure	Criterion	Objective
Bradford's law	Degree of attraction of journal	Reputation of journal	Identify the most relevant journals that give the most flow to a particular topic
Zipf's Law	Keyword Frequency	Ordered List of Subjects	Estimate the most recurring topics related to a field of knowledge
Lotka's Law	Productivity author	Size-frequency	Raise the impact of an author's production on a knowledge area

Source: Source: Chueke and Amatucci (2015, p. 3)

Bradford's Law on Journal Productivity makes it possible to estimate the degree of relevance of journals in a field of knowledge. Lotka's Law on authors' scientific productivity points out that some researchers, supposedly more prestigious in a particular field of knowledge, produce a lot, and many researchers, possibly less prestigious, produce little. Zipf's Law allows to estimate the frequency of words in scientific and technological texts (Guedes, 2012).

Importantly, bibliometric analysis is a flexible instrument to assess the quantity and quality of information sources that are cited in research, and the products of this are the scientific indicators of this production. In this analysis quantitative methods are applied for statistical analysis of publications and scientific activities (Silva, Hayashi & Hayashi, 2011).

These bibliometric studies, besides contributing to the analysis of scientific production, also use methodologies to identify editorial trends, raising knowledge on a particular theme, enabling the pointing of gaps to assist future research (Ribeiro & Silva, 2016).

Thus, bibliometry allows the analysis of scientific activities, allowing an evaluation on the quantity of works that have been published, being possible this

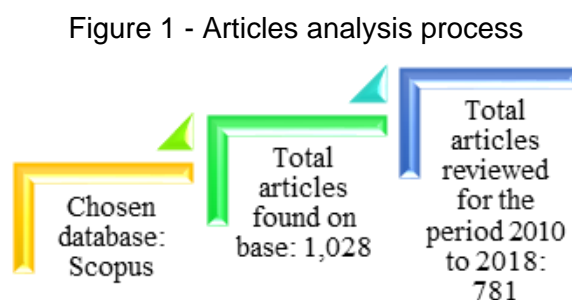
analysis by date, by author, by journal, among others, which allows to verify the growth of these productions scientific.

## Methodology

The research involves a bibliometric analysis of published articles related to female entrepreneurship. Bibliometrics corresponds to a methodology that allows the census of scientific activities through data analysis (Kobashi & Santos, 2008).

A search was made in the online database Scopus, aiming to map the production on the theme analyzed. In the Scopus database, the keywords “female entrepreneurship” were used in the field “Article Title, Abstract, Keywords”, and the filter was applied only to select the articles; 1,028 publications from 1960 to 2018 were found. However, data from 2010 to 2018 were filtered, reducing the search to the last 18 years, totaling 781 documents found.

The data found from the databases were exported to a spreadsheet and analyzed together, and duplicate articles were excluded, as can be seen in Figure 1.



Source: Own authorship (2019)

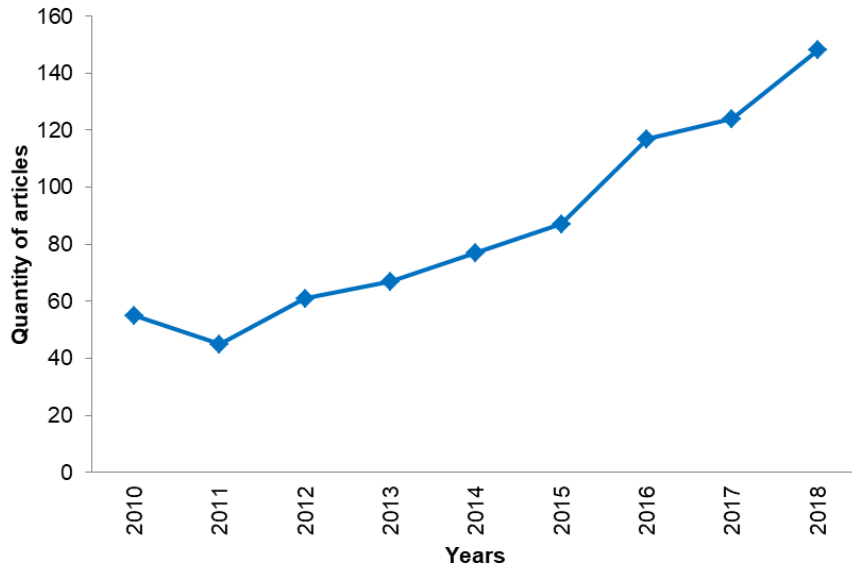
## Results and Discussion

In the research carried out in the Scopus database, scientific productions related to the theme female entrepreneurship were analyzed, and these publications occurred from 2010 to 2018. The Figure 2 shows the annual evolution of the articles



in the Scopus database, highlighting that from 2016 there was a growth in the production of articles related to female entrepreneurship.

Figure 2 - Distribution of articles by year



Source: Scopus (2019)

It can be seen in Figure 2 that the year 2018 presented the largest number of articles on the subject, 148, representing 15% of the data found. Analyzing the interval from 2016 to 2018, in which there was an increase in publications, we observed that 204 articles were published, totaling 50% of publications, showing that the production on this theme has been growing over the years.

Figure 3 shows the 10 most frequently published journals, highlighting the articles with the most publications, with a total of 205 articles. The International Journal of Gender and Entrepreneurship featured the largest number of articles on the topic, 62 (30%), followed by the International Journal of Entrepreneurship and Small Business 34 (17%) and the Journal of Developmental Entrepreneurship with 8 (11%).

Figure 3 - Most frequently published journals

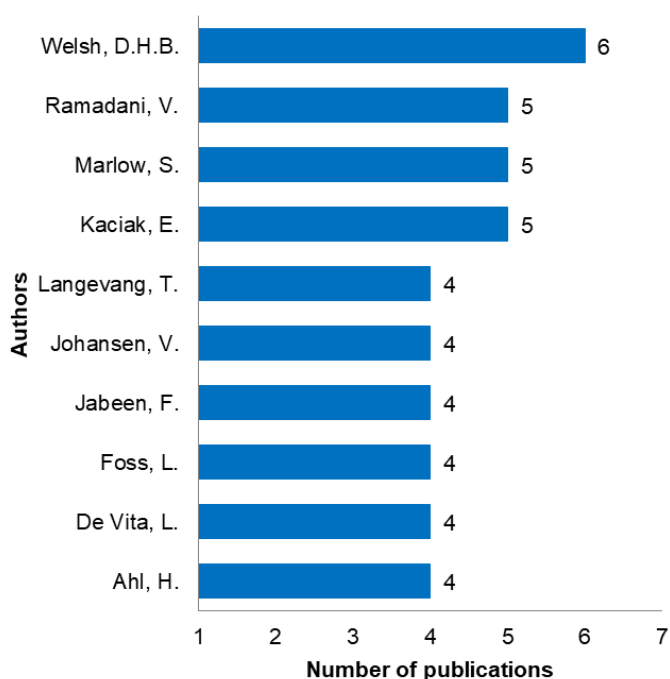


Source: Scopus (2019)

The International Journal of Gender and Entrepreneurship is a magazine that reviews articles on entrepreneurship, female entrepreneurship, business, management, strategy, etc.; while the International Journal of Entrepreneurship and Small Business is a government policy journal on entrepreneurship, entrepreneurship among minority groups, indigenous entrepreneurship, etc.

Also, the Journal of Developmental Entrepreneurship focuses on issues related to microenterprise and small business development. This shows that the journals with the largest number of articles are focused on analyzing female entrepreneurship studies.

Figure 4 - Authors with the largest number of publications



Source: Scopus (2019)

Figure 4 shows the ten authors with the largest number of publications on the analyzed topic, with Welsh, D.H.B. has 6 publications; Kaciak, E. Marlow, S., Ramadani, V. have 5 publications each. Table 2 shows the authors with the largest number of publications, highlighting the affiliations of these researchers and the countries of origin.

Table 2 - Authors with the most publications and their affiliations

Author	Affiliation	Country
Welsh, D.H.B.	The University of North Carolina at Greensboro	United States
Ramadani, V.	South East European University	Macedonia
Marlow, S.	University of Nottingham	United Kingdom
Kaciak, E.	Brock University	Canada
Langevang,	Copenhagen Business School	Denmark

T. Johansen, V.	Østlandsforskning	Norway
Jabeen, F.	Abu Dhabi University	United Arab Emirates
Foss, L.	UiT The Arctic University of Norway, Tromso	Norway
De Vita, L.	Università degli Studi di Roma La Sapienza	Italy
Ahl, H.	Högskolan i Jönköping	Sweden

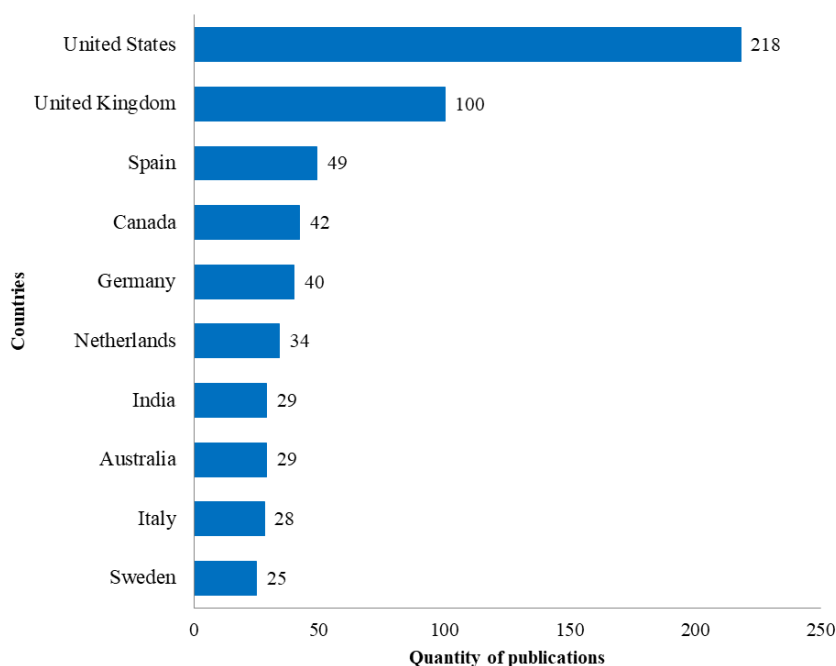
Source: Scopus (2019)

The Figure 5 highlights the ten countries with the highest concentration of publications related to female entrepreneurship, with the country with the highest number of publications being the United States, with 218; representing 36%, followed by the United Kingdom with 100 (17%) and Spain with 49 (8%).

It was noticed that Brazil is present in the list of countries that published on the subject, but not among the ten countries that made more publications focused on female entrepreneurship, presenting only 10 publications.

Even with its low number of publications on female entrepreneurship in relation to Brazil, women have been characterized as one of the most enterprising women in the world, as they became responsible for the development of most of the new businesses that emerged in the country (Carrijo & Ferreira, 2017), showing that even as the low scientific indicators, Brazilian entrepreneurs have been standing out in the market.

Figure 5 - Countries with the most publications

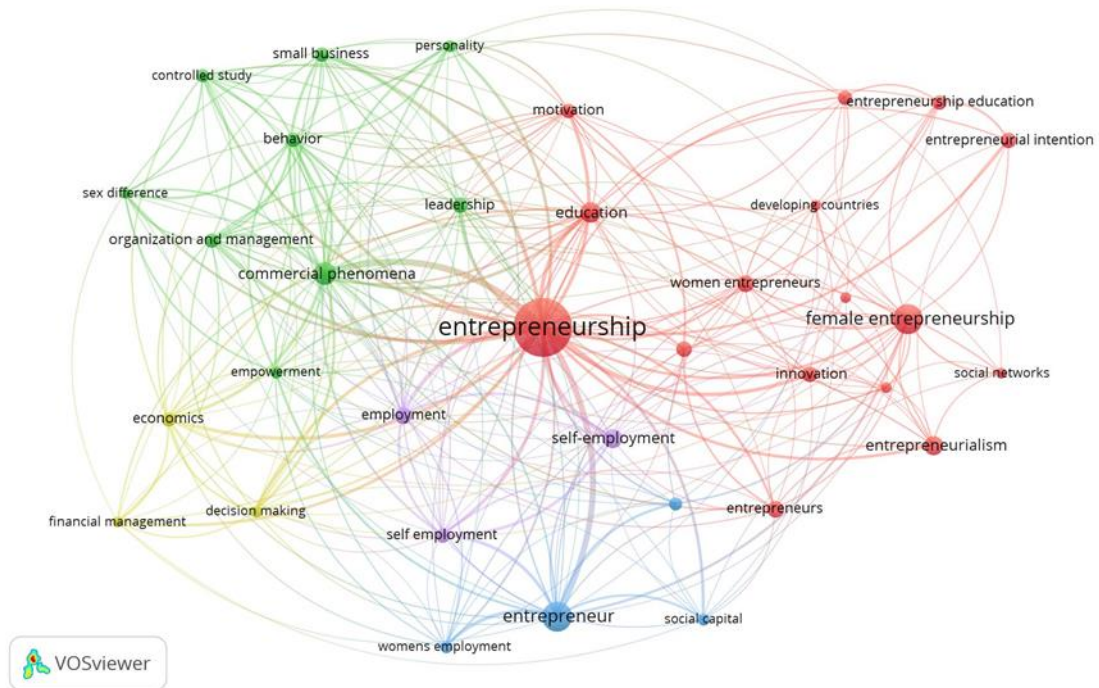


Source: Scopus (2019)

The Figure 6 highlights the use of VOSViewer, a computer program that has free access and is used to create bibliometric maps. This study aimed to build a network of occurrences of keywords that were used by the authors of the 781 articles found in the Scopus database.

Through VOSViewer, the frequency of the keywords was identified, and 64 were found. From this number, all words that were not directed to the purpose of this study were removed, leaving 34 words that formed 5 clusters, which are represented by different colors. , which means the division of clusters between words.

Figure 6 - Keyword occurrences



Source: VOSViewer (2019)

Analyzing the terms, it is noticed that most words are related to entrepreneurship and women, showing that the search identified publications related to the theme under study. Importantly, the themes appear in English, as this software only works with this language.

### Conclusion

In the research conducted in the Scopus database, scientific productions related to female entrepreneurship were analyzed; this type of technique makes it possible to identify articles and journals that deal with a specific theme, favoring the development of new research.

It was noticed that before the use of Scopus filters, documents were identified from 1960 to 2018, but the research only sought to bring data information from 2010 to 2018, and it was found that from 2016 there was a higher growth of article production. focused on the subject under study.

Still, it was noted that there are Brazilian productions on female entrepreneurship in the analyzed base, but this was not among the 10 countries with the largest number of publications, while the United States and the United Kingdom presented a larger quantity of scientific productions.

Moreover, by analyzing through VOSViewer the productions, it is understood that they are related to entrepreneurship, women and business, showing that bibliometrics only sought data correlated with the theme.

It is suggested as future research, the use of analysis in other databases, as it only deepened in data from the Scopus database, to analyze a larger number of productions aimed at female entrepreneurship.

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