

Research Article

Entrepreneurial action: A bibliometric study on the international scientific production

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Abstract

Objective: To analyze the international scientific production in the field of entrepreneurial action. **Method:** To investigate the theme of entrepreneurial action, the bibliometric method was used to fulfill the desired purposes. In the operationalization of the research, articles available in the Web of Science and Scopus databases were included. The database selection procedure was carried out by analyzing the documents using the software: My EndNote Web, Microsoft Excel and VOSviewer. **Results:** It was possible to identify the scarcity of compassionate research on the subject, in addition to the fact that little is known about the emergence of an entrepreneurial action and how, in fact, this research axis can contribute to studies on entrepreneurship. **Theoretical contributions:** It was identified that there are promising studies on the subject that made possible the exchange of the concept of entrepreneurial action and the different areas of knowledge through the construction of a synthesis matrix. **Relevance/originality:** The field of entrepreneurial action is still incipient and requires greater efforts towards a theoretical and empirical development, in order to establish and contribute to the construction of a very limited and defined conceptual structure about the phenomenon. **Contributions to management:** Studies on entrepreneurial action are directly related to case studies that report the emergence of entrepreneurial actions in organizations, which emphasizes the concentration of work in the areas of management and business.

Keywords: Entrepreneurial action. Entrepreneurship. Bibliometric method. Matrix-synthesis.

Ação empreendedora: Um estudo bibliométrico sobre a produção científica internacional

Resumo

Objetivo do estudo: Analisar a produção científica internacional do campo da ação empreendedora. **Metodologia/abordagem:** Para investigar a temática da ação empreendedora foi utilizado o método bibliométrico. Na operacionalização da pesquisa foram incluídos os artigos disponíveis na base de dados da Web of Science e da Scopus. Para a seleção do banco de dados analisou-se os documentos por meio dos softwares: My EndNote Web, Microsoft Excel e VOSviewer. **Principais resultados:** Foi identificado a escassez de pesquisas compassivas à temática, constatou-se que pouco se sabe do percurso da emergência de uma ação empreendedora e como de fato este eixo de pesquisa pode contribuir com os estudos sobre o empreendedorismo. **Contribuições teóricas/metodológicas:** Identificou-se que existem estudos promissores acerca da temática que possibilitaram o intercâmbio do conceito da ação empreendedora com as diversas áreas do conhecimento, o que possibilitou a construção de uma matriz-síntese. **Relevância/originalidade:** O campo da ação empreendedora ainda é incipiente e requer maiores esforços em direção a um desenvolvimento teórico e empírico, a fim de estabelecer e contribuir para a construção de uma estrutura conceitual bem limitada e definida acerca do fenômeno. **Contribuições sociais para a gestão:** Os estudos sobre a ação empreendedora estão diretamente relacionados a estudos de caso que relataram a emergência de ações empreendedoras em organizações, enfatizando a concentração de trabalhos nas áreas de gestão e negócios.

Palavras-chave: Ação empreendedora. Empreendedorismo. Método bibliométrico. Matriz-síntese.

INTRODUCTION

The absence of a well-defined conceptual framework regarding entrepreneurship has impacted the fact that many existing research studies have emphasized the role of a single individual, the entrepreneur, to the detriment of entrepreneurial actions (Alvarez & Barney, 2007; Klein, 2008; Teece, 2012; Dimov & Pistrui, 2020; Lacerda & Andrade, 2021). Some more recent studies have revealed that entrepreneurship should be understood as a process in which the entrepreneurial role is not necessarily linked to the actions of a single individual possessing exceptional characteristics (Alvarez & Barney, 2007; Watson, 2013; Lacerda & Andrade, 2021).

Studies that have explored the economic and behavioral approaches to entrepreneurship have emphasized that the entrepreneur is an individual with a distinctive profile and skills to leverage and develop businesses, generating economic profit for enterprises (Alvarez & Barney, 2007; Lacerda & Andrade, 2021). Thus, for a long time, the entrepreneur was characterized as a heroic personality who injected high economic gains into companies to ensure success and sustainability in the market (Shane & Venkataraman, 2000; McMullen & Shepherd, 2006; Alvarez & Barney, 2007).

On the other hand, the processual approach to entrepreneurship suggests that the phenomenon is part of the social environment and is present in various segments of society, such as the economic, environmental, social, and public contexts (Watson, 2013; Spedale & Watson, 2014; Dimov & Pistrui, 2020; Lacerda & Andrade, 2021). This is because, according to the pioneers of studies from this perspective, the act of entrepreneurship should not be understood as an attribute of a few but as a process that can be learned and developed by anyone (Saravathy, 2001; Alvarez & Barney, 2007; Frese, 2009; Mocelin & Azambuja, 2017; Dimov & Pistrui, 2020; Lacerda & Andrade, 2021).

This contemporary perspective on entrepreneurship analysis has been developed and documented in the international scientific literature since the 2000s, indicating that action should be one of the main units of investigation of the phenomenon (McMullen & Shepherd, 2006; Alvarez & Barney, 2007; Frese, 2009; Watson, 2013; Spedale & Watson, 2014; Morales et al., 2019; Dimov & Pistrui, 2020; Wood et al., 2021; Lacerda & Andrade, 2021).

The conceptualization of entrepreneurial action can be understood as a response to a decision under conditions of uncertainty regarding a potential profit opportunity (McMullen & Shepherd, 2006; Townsend et al., 2018; O'Shea et al., 2021; Wood et al., 2021; Angus et al., 2022). In the view of Boszczowski and Teixeira (2012) and Lacerda and Andrade (2021), entrepreneurial action consists of a collective action aimed at mobilizing resources through the creation of new goods and services.

For Dimov and Pistrui (2020) action is the main pillar for understanding the occurrence of entrepreneurship because the entrepreneurial process implies an underlying purpose for a logical and directed action. According to the authors, entrepreneurial action can represent interests, intentions, or purposes, being compliant with the rational action of individuals within a specific context, whose combination of organizational interests results in a social conception. Thus, it can be inferred that actions related to an enterprise can transcend different organizational and social structures.

Given the context presented and in order to explore and understand how entrepreneurial action unfolds, the question arises: How has entrepreneurial action been evidenced in the international scientific literature over the years? To address this question, this article, in its general objective, analyzes international scientific production in the field of entrepreneurial action. Specifically, it sought to understand, in relation to the authors, the main categories of analysis of the topic and create a synthesis matrix based on the findings.

In accordance with the research objective, the bibliometric method was chosen, as it is the most suitable for achieving the predefined purposes. Bibliometric study is essentially a quantitative and exploratory technique aimed at identifying, quantifying, and describing certain research fields through cluster analysis (Machado Júnior et al., 2016). Data were collected by searching for scientific papers indexed in the Web of Science and Scopus databases, as these are available through the CAPES System (Brazilian Coordination of Superior Level Staff Improvement), given that access to it is provided by the Higher Education Institution to which the authors of this article are affiliated.

The results of this study demonstrated that entrepreneurial action is an emerging and developing field in international scientific literature. The scarcity of research related to the topic was identified, and it was found that there is limited information about the emergence of entrepreneurial action and how this research field can actually contribute to entrepreneurship studies. Thus, the search for a synthesis matrix aims to fill this gap by presenting the main possibilities for research on the subject.

Therefore, the article provides theoretical contributions by detailing the main conceptual categories that define the field, opening up possibilities for further studies. Moreover, the study can be useful to both advanced researchers and those starting their investigations into entrepreneurial action, as it contains relevant information such as key authors and the most worked categories related to the topic.

From an empirical standpoint, the contributions go beyond academic gains, as understanding entrepreneurial action contributes to developing a conceptual framework for entrepreneurship, because it is through entrepreneurial action that the entrepreneurial process actually takes place (McMullen & Shepherd, 2006; Alvarez & Barney, 2007; Frese, 2009; Dimov & Pistrui, 2020; Morales et al., 2019; Wood et al., 2021; Lacerda & Andrade, 2021).

Thus, the analysis of the field of entrepreneurial action and the identification of the main conceptual structures developed in it are the main differentiators of the article. The proposal of a synthesis matrix can contribute to the emergence of new developments in the field. It is worth noting that no specific bibliometric studies on the topic were found in previous research.

METHOD

The study analyzes the international scientific production in the field of entrepreneurial action and is considered exploratory research. Bibliometrics was used as the method for data collection and analysis, which is essentially a quantitative technique aimed at integratively and systematically measuring and analyzing the international scientific production in a particular area of knowledge (Prado et al., 2016).

The research was organized based on the stages and procedures used in the study by Prado et al. (2016), as listed in the table [Table 1](#).

For the operationalization of the research, articles available in the Web of Science (WOS) and Scopus databases were used, as they are references for the field of applied social sciences due to the quality and relevance of the works indexed in them. Additionally, these databases provide various resources that allow for the download of consistent metadata for conducting bibliometric studies (Prado et al., 2016), which are compatible with the software used in this study.

The research procedure used in both databases was detailed in [Table 1](#), as well as the keywords inserted into the search strings (Item 2.1). Inclusion criteria included using the filters available on each database's website to select only articles and reviews, with no temporal, area, or language restrictions, given the low

quantity of publications found. It should be noted that the research was conducted between early November and December 12, 2022, resulting in 84 documents found in WOS, specifically 81 articles and 3 reviews, and 140 documents in Scopus, comprising 134 articles and 6 reviews.

in the last 5 years was performed, due to the significant increase in publications during this period, which formed the basis for the proposed synthesis matrix.

PRESENTATION OF RESULTS

Based on the extraction and organization of data obtained from the metadata available in the databases, this section presents an analysis of the research front regarding entrepreneurial action, author productivity, categories, and thematic analysis. The aim is to explore temporal trends in international scientific production, the countries that published the most, the number of article citations, author and co-author networks, publication categories, and keywords. Finally, a synthesis matrix is proposed to highlight the main possibilities found within the theme.

Analysis of the research front

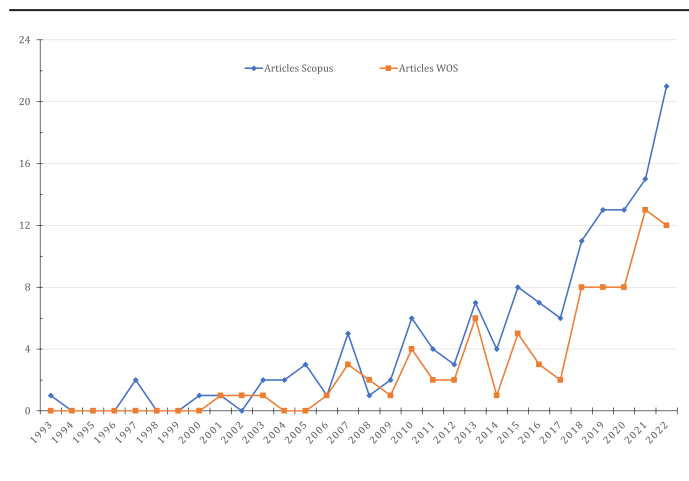
Temporal trends, countries, and journals

The temporal trend of international scientific production on entrepreneurial action showed that the first article in this field was published in 1993, based on data obtained from Scopus. According to WOS data, records only began in the early 2000s.

In both databases, the initial investigations into the field were quite modest, with few articles published and even some stagnant periods without publications. However, there was a considerable increase in works in the mid-2000s, specifically between 2018 and 2022 in both databases. In WOS, there was a peak of publications in 2021, with 13 documents found. As for Scopus, the highlight is in 2022, with 21 publications identified so far, as illustrated in Figure 1.

Figure 1

Temporal trend of international scientific production



Note: Elaborated by the authors.

Table 1

Framework of bibliometric analysis

Stage	Procedure	Description
1	Organization of the research	1.1 Choice of scientific base(s): Web of Science and Scopus
		1.2 Delimitation of terms that represent the field: entrepreneur action
2	Search procedures (filters)	2.1 Title ("entrepreneur* _action") OR ("action_ theory_ of_ entrepreneur*")
		2.2 Use of underscore and asterisk: exact expression and variations of the term
		2.3 Filter 1: Delimitation to only articles and reviews
		2.4 Filter 2: All years
		2.5 Filter 3: All areas
		2.6 Filter 4: All languages
3	Selection procedures (Database)	3.1 References download - My EndNote Web
		3.2 References download in digital spreadsheet format - Excel
		3.3 References download for use in VOSviewer
		3.4 References organization in My EndNote Web
		3.5 Organization of analysis matrix in digital spreadsheet
		3.6 Importing data into analysis software
4	Suitability and organization of the data	4.1 Deleting articles through floating reading
		4.2 Elimination through analysis of the polysemy of terms
		4.3 Search for full articles in pdf
5	Research front analysis	5.1 Analysis of the volume of publications and temporal trends
		5.2 Analysis of the countries of selected articles
		5.3 Analysis of the journals that published the most
		5.4 Analysis of citations of selected articles
		5.5 Analysis of authorship and co-authorship
		5.6 Analysis of categories (areas) of publications
		5.7 Keyword analysis
6	Synthesis matrix	6.1 Reading Web of Science and Scopus articles available in open access
		6.2 Summary of main results
		6.3 Discussion of possibilities within the theme

Note: Elaborated by the authors based in Prado et al. (2016).

To perform the database selection procedure, it was decided to analyze the documents using My EndNote Web, Microsoft Excel, and VOSviewer software (Van Eck & Waltman, 2010). The references were organized using My EndNote Web. Data were analyzed from spreadsheets and graphs systematized in Microsoft Excel, and networks and figures were obtained using VOSviewer by downloading metadata available in WOS and Scopus.

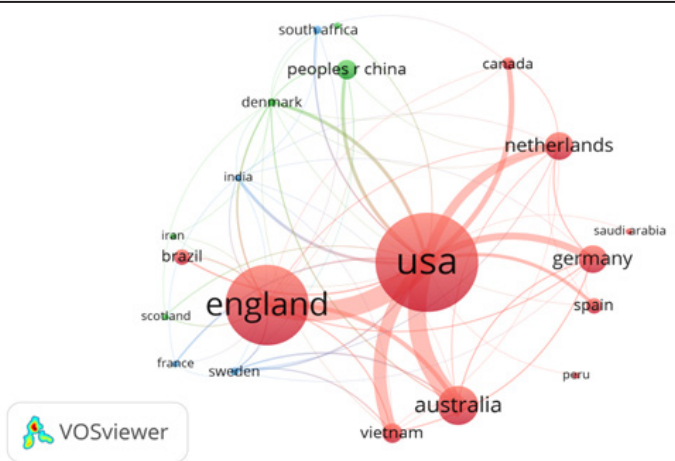
Data were exported and organized in the respective software, and the search for open-access pdf files of articles and reviews in the databases was also conducted. A thorough reading of all the abstracts of publications and 55 open-access articles was carried out, with 25 articles provided by WOS and 30 by Scopus, with an emphasis on publications from 2018 to 2022. Through the reading of the works, a thematic analysis of the documents found

Studies on entrepreneurial action are recent and still relatively unexplored in the international scientific literature, with an annual growth rate of approximately 16.8%. In the Scopus database, studies on the topic were published in 42 countries, while WOS presents publications in 29 different countries. A few Western countries concentrated a higher volume of publications in both databases, such as the United States, England, and Australia, as shown in Figure 2.

Regarding the productivity of journals, Figure 3 illustrates those which published the most on the subject under study. In line with the previous analysis, it is evident that the journals that published the most on the topic are based in the United States and England.

Figure 2

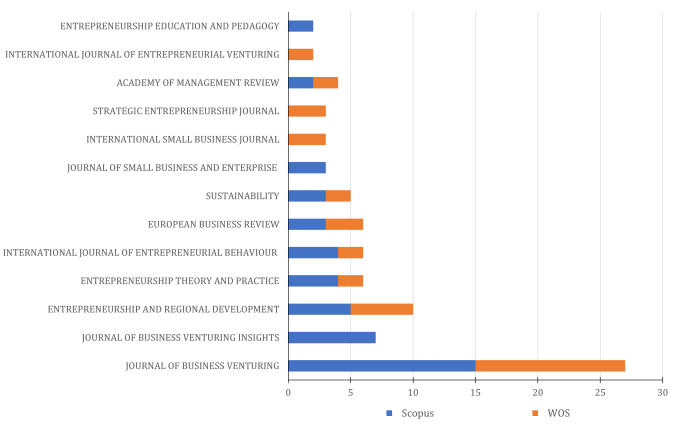
Mapping of countries



Note: Elaborated by the authors.

Figure 3

Analysis of journals that published the most



Note: Elaborated by the authors.

The "Journal of Business Venturing", a journal which concentrated the most publications on entrepreneurial action in both the WOS and Scopus databases, is of American origin, followed by "Entrepreneurship and Regional Development", which is of English origin. It is worth noting that these journals are dedicated to publishing specific works on entrepreneurship and have a high impact factor, indicating the relevance and recognition of entrepreneurial action in international scientific literature.

Thus, Figure 3 illustrates the quantity of the thirteen journals that published the most on the subject, with 57 different outlets found in WOS and 94 in Scopus. However, it reaffirms the incipient nature of studies on entrepreneurial action because only 10.52% (WOS) and 9.57% (Scopus) of the journals in the sample had more than three indexed publications, followed by 7.01% (WOS) and 8.51% (Scopus) with up to two works, and finally, the most representative part, where 82.47% (WOS) and 81.92% (Scopus) of the journals published only one article on entrepreneurial action.

Author productivity

Analysis of citations and authorship and co-authorship networks of selected articles

The most cited works on entrepreneurial action are concentrated in Table 2. The five most cited publications were indexed in high and medium-impact factor journals, specifically in the fields of entrepreneurship and business management. It was noted that among these works, three are present in both the Web of Science and Scopus databases.

Table 2

Most cited works and authors

Title, authors, and Journal	Year	Scopus		WOS	
		Total of citations	Year average	Total of citations	Year average
Entrepreneurial action and the role of uncertainty in the theory of the entrepreneur McMullen & Shepherd, 2006 Academy of Management Review	2006	1576	92,71	1375	80,88
Discovery and creation: alternative theories of entrepreneurial action Alvarez & Barney, 2007 Strategic Entrepreneurship Journal	2007	Not indexed		1041	65,06
Dynamic Capabilities: Routines versus Entrepreneurial Action Teece, 2012 Journal of Management Studies	2012	Not indexed		661	60,09
Toward a theory of sustainable entrepreneurship: Reducing environmental degradation through entrepreneurial action Dean & McMullen, 2007 Journal of Business Venturing	2007	782	48,88	660	41,25
The New Field of Sustainable Entrepreneurship Shepherd & Patzelt, 2015 Entrepreneurship Theory and Practice	2015	429	35,75	533	44,42

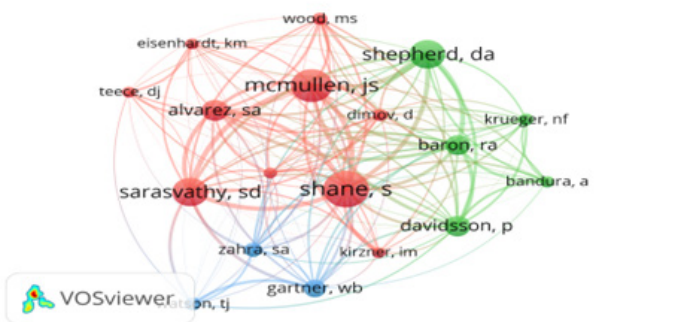
Note: Elaborated by the authors.

The articles authored by Alvarez and Barney (2007) and Teece (2012) were indexed only in Web of Science journals and had higher impact factors when compared to the other journals. The quality of publications influences the reputation of journals because it takes into account the number of citations that publications indexed to them receive (Prado et al., 2016). Therefore, higher-quality articles are expected to have a greater number of citations.

It is worth noting that among the five most cited works, those authored by McMullen, J. S. and Shepherd, D. A. (McMullen & Shepherd, 2006; Dean & McMullen, 2007; Shepherd & Patzelt, 2015) appear more than once in the table, highlighting the importance of these authors to the field of entrepreneurship and entrepreneurial action. The data also showed that there are 165 different authors in WOS and 307 in Scopus who have dedicated themselves to the theme of entrepreneurial action.

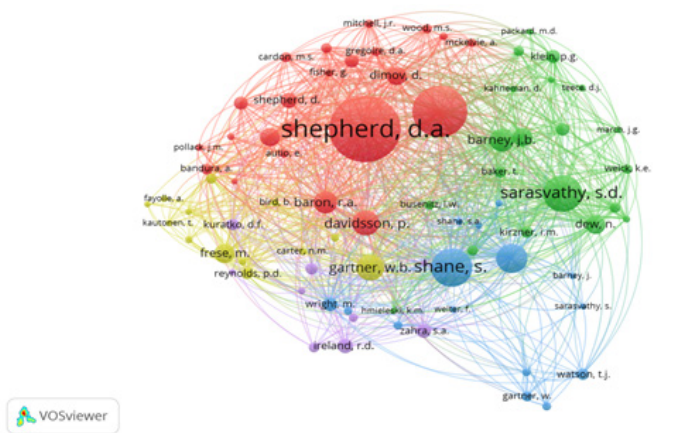
Figure 4 and Figure 5 illustrate the co-citation analysis data compiled by WOS and Scopus, respectively.

Figure 4
Co-citation analysis (WOS)



Note: Elaborated by the authors.

Figure 5
Co-citation analysis (Scopus)



Note: Elaborated by the authors.

Among the prominent nodes in both databases, authors Shane and Venkataraman (2000) and Sarasvathy (2001) stood out, as these were the most co-cited studies in the investigated databases. Through the nodes presented in the network, it was observed that these authors were cited by a variety of works.

Categories and thematic analysis

Studies on entrepreneurial action were addressed in various areas of knowledge. A dominance of publications in the Web of Science database was observed in the field of Applied Social Sciences, particularly in the area of Business, accounting for 60.71% of publications, and Management, with 36.90% of published works.

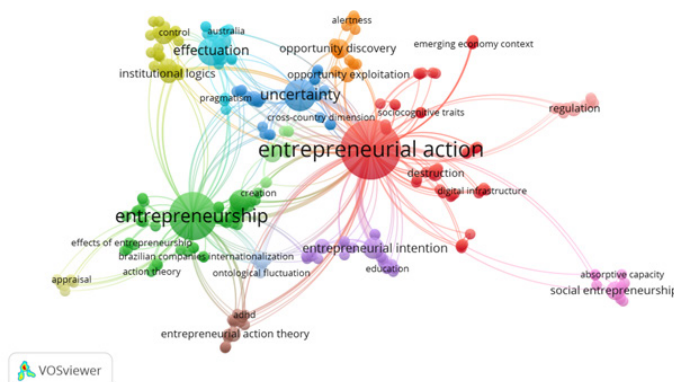
As for the Scopus database, the field of Business, Management, and Accounting accounted for 45.7% of publications. The second prominent area was Social Sciences, with 16.2% of works, and the third most prominent was Economics, Econometrics, and Finance, with 13.2% of publications.

In addition to categories, an analysis of keywords in the selected sample studies was conducted. Keywords that appeared most frequently in the studies were identified, as defined by the authors in both the Web of Science and Scopus databases, which is illustrated in Figure 6.

Out of the 84 works published in WOS, 328 different keywords were found, and in the 140 documents analyzed in the Scopus database, 445 keywords were found. The keyword "Entrepreneurial Action" was the most prominent, followed by "Entrepreneurship" and "Entrepreneur" simultaneously. In this scenario, due to the high

number of keywords found, it was inferred that studies related to entrepreneurial action have various perspectives to be considered given their multifaceted aspects.

Figure 6
Keyword analysis (WOS and Scopus)



Note: Elaborated by the authors.

DISCUSSION OF RESULTS

Analysis of research trends

The temporal trend of international scientific production related to entrepreneurial action indicated that studies in this area began to be published in 1993 according to the Scopus data. It was observed that until the mid-2000s, publications were scarce in both databases, with few articles published, and in certain periods, no publications at all.

The pioneering studies indexed in the investigated databases, in summary, sought to define alternatives for a theory of entrepreneurial action emergence (McMullen & Shepherd, 2006; Alvarez & Barney, 2007; Klein, 2008; Watson, 2013; Spedale & Watson, 2014). Other studies converged by attempting to differentiate entrepreneurial action from intention, which allowed for the inference of the asymmetry between administrative actions and entrepreneurial actions (Sarasvathy, 2001; Teece, 2012; Mathias et al., 2015; Mocelin & Azambuja, 2017; Townsend et al., 2018; Wiklund et al., 2018; Dimov & Pistrui, 2020; Rapp & Olbrich, 2020; Wood et al., 2021).

Other works also sought to discern entrepreneurial action in social ventures (Meek et al., 2010; Weerakoon et al., 2019; Alonso et al., 2020; García-Morales et al., 2020; Nsereko, 2021; Kimmitt et al., 2022) and the influence of time on the emergence of entrepreneurial action (McKelvie et al., 2011; Greenman, 2013; Morales et al., 2019; Dimov & Pistrui, 2020; Wood et al., 2021).

Furthermore, a significant portion of these studies emphasized the role of opportunity in the entrepreneurial process. Opportunity could be understood as one of the central elements of entrepreneurship, as found in numerous studies (Shane & Venkataraman, 2000; Sarasvathy, 2001; McMullen & Shepherd, 2006; Alvarez & Barney, 2007; Klein, 2008; Boszczowski & Teixeira, 2012; Mocelin & Azambuja, 2017; Scheaf et al. 2019). However, despite all the efforts, no study was found that could validate the antecedents or even suggest a solid, consistent, and accurate theory of entrepreneurial action.

Regarding the countries that published the most on the subject, it was noted that the United States was the country that initiated publications on entrepreneurial action, followed by England. It was understood that the prominent countries have

been studying entrepreneurship beyond a strictly individualistic approach, seeking evidence that contributes to understanding the entrepreneurial process with an emphasis on actions, practices, and results achieved by enterprises (Shane & Venkataraman, 2000; Sarasvathy, 2001; McMullen & Shepherd, 2006; Alvarez & Barney, 2007; Klein, 2008; Frese, 2009; Watson, 2013; Dimov & Pistrui, 2020; Lacerda & Andrade, 2021; Wood et al., 2021). Consequently, the concentration of publications in these countries demonstrated the dominance of the English language in 97.4% of publications.

Although not evident in the mapping of countries that published the most on the subject of entrepreneurial action, this study demonstrated an interesting result when considering a decolonial perspective. In this sense, three studies from Brazilian journals were indexed in the Web of Science database. The study by Lacerda and Andrade (2021) addressed entrepreneurial action in the context of public administration, identifying the emergence of the phenomenon in a post-purchase sector in a higher education institution.

De Sordi et al. (2021) sought to investigate how professors who teach entrepreneurship courses in postgraduate programs at Brazilian universities explored both favorable and unfavorable aspects of entrepreneurial action in Brazil. This is because the authors identified that the repercussions of entrepreneurial actions in emerging countries are not as positive as in developed countries. It is worth noting that the same article was also found in the Scopus database.

The study by Cassano et al. (2021) identified how entrepreneurial action contributes to the acceleration and internationalization process of Brazilian business incubators. Entrepreneurial action played a fundamental role in increasing exports, and the joint action of various institutions contributed significantly to the integration of various actors in seeking effective actions and greater participation in the internationalization process of incubators.

In the Scopus database, Brazil also appeared with three registered publications. The first one was in 2017 with the article "Empreendedorismo intensivo em conhecimento: elementos para uma agenda de pesquisas sobre a ação empreendedora no Brasil" ("Knowledge-intensive entrepreneurship: outline for a research agenda on entrepreneurial action in Brazil"), authored by Mocelin and Azambuja (2017). The authors associated certain conceptual advances in entrepreneurial action with empirical phenomena analyzed by the behavior of entrepreneurial individuals. The article pointed out that the theory of entrepreneurial action encompasses relevant aspects of opportunity exploitation by agents, indicating a path of possible alternatives to achieving organizational objectives.

The second publication, by De Sordi et al. (2021), was also indexed in WOS, as mentioned earlier. Finally, the third Brazilian publication was made in 2022 by the same authors with the article "Dark, down, and destructive side of entrepreneurship: Unveiling negative aspects of unsuccessful entrepreneurial action". De Sordi et al. (2022) sought to investigate and classify the variety of negative approaches resulting from entrepreneurial actions. The results of the study indicate that entrepreneurial actions do not always yield entirely positive results, as they can have detrimental effects on the entrepreneur both objectively and subjectively.

Regarding the productivity of the journals, the results demonstrated the academic community's effort to debate the practices highlighted by the entrepreneurial process, shifting the focus of studies that centralize the entrepreneurial individual and the creation of new ventures to entrepreneurial action (McMullen & Shepherd, 2006; Alvarez & Barney, 2007; Klein, 2008; Watson, 2013; Spedale & Watson, 2014; Mocelin & Azambuja, 2017; Lacerda & Andrade, 2021). Thus, the intensity of publications related to entrepreneurial action was evident in recent years, possibly due to the need emphasized by the contemporary approach to

understanding entrepreneurship as a process derived from actions (Shane & Venkataraman, 2000; Sarasvathy, 2001; Frese, 2009; Watson, 2013; Mocelin & Azambuja, 2017).

Therefore, it was found that the term "entrepreneurial action" is still recent, considering that in the extensive number of journals, there is only one publication on the subject. Thus, it is clear that the works were directed towards the facets of entrepreneurship and its implications for the entrepreneurial individual. Despite this, researchers have made efforts to publish in the area, although a broader movement is still needed to consolidate the field.

Author productivity

In the analysis of citations and authorship and co-authorship networks of the selected articles, the most cited works in both databases, that is, the article "Entrepreneurial action and the role of uncertainty in the theory of the entrepreneur" by McMullen and Shepherd (2006) was one of the pioneering studies on the subject. The authors proposed that entrepreneurial action can occur in two main stages.

According to the authors, the first stage involves the identification of an opportunity as possible for someone or for a group of actors, and the second stage occurs when the opportunity is exploited and seen as potential for a single individual or several individuals operating together. Thus, McMullen and Shepherd (2006) emphasized that entrepreneurial action is driven by the identification of an opportunity weighed by the actors involved in this process.

The second most cited study, although only indexed in Web of Science, was "Discovery and creation: alternative theories of entrepreneurial action" by Alvarez and Barney (2007), also being considered one of the pioneering studies in the field, contributing to subsequent research on the theory of entrepreneurial action. Starting from the question of whether opportunities for entrepreneurship exist independently of entrepreneurs' perceptions or if opportunities can be created and explored, the authors proposed an analysis of the theory of discovery and the theory of creation to understand and propose a theoretical model for entrepreneurial action. The authors questioned whether opportunities are indeed waiting for someone to discover and explore them at all times, as they believed that opportunities arise from individuals' actions and their dedication to achieving a purpose.

In Scopus, the second most cited study was by Dean and McMullen (2007), which was also the third most cited according to WOS. The work addresses an understanding of how entrepreneurship assists in addressing environmental demands related to global socioeconomic systems. Additionally, it presented definitions of environmental and sustainable entrepreneurship and investigated the proposed theory, which aims to extend beyond the environmental context and generate insights for the growth of entrepreneurship and entrepreneurial action studies.

Finally, the fourth most cited work in both databases is authored by Shepherd and Patzelt (2015). The authors presented a definition supported by the literature on sustainable entrepreneurship. In seeking new paths, they presented a research agenda supported by psychological, institutional, and economic perspectives. The research questions proposed sought to support "what should be developed" and "what should be sustained" when it comes to research related to sustainable entrepreneurship.

Among the four most cited articles, it was observed that two studies were associated with the authors McMullen and Shepherd, respectively, highlighting their importance in the field of entrepreneurship and entrepreneurial action. Furthermore, two studies addressed the topic of sustainable entrepreneurship

and its peculiarities with entrepreneurial action, suggesting the consistency of the theory and promising developments in subsequent studies.

In this context, it is worth mentioning the identification of the situational nature of entrepreneurial action (Greenman, 2013; Morales et al., 2019; Dimov & Pistrui, 2020; McKelvie et al., 2011; Wood et al., 2021); its manifestation in different contexts (Dean & McMullen, 2007; Weerakoon et al., 2019; Alonso et al., 2020; García-Morales et al., 2020; Nsereko, 2021; Lacerda & Andrade, 2021) and the adoption of the phenomenon as part of the social environment and present in our daily lives (Sarasvathy, 2001; Watson, 2013; Spedale & Watson, 2014).

Despite the identification of seminal authors dedicated to studies on entrepreneurial action, the productivity of the field is still incipient. The present study revealed that 86.07% (WOS) and 89.26% (Scopus) of authors dedicated to research on entrepreneurial action published only one paper, while 13.93% (WOS) and 10.74% (Scopus) published more than two papers. It was inferred that the more publications there are on a specific topic, the more productive that field will be. However, this relationship is inverse, as most authors typically only focus on one publication on the subject, as presented in the results.

In addition to the authors who were presented earlier, many of them were not indexed in the investigated databases but appeared prominently in bibliographic coupling. This analysis demonstrated that, in addition to the works already highlighted, there are other works present in bibliographic coupling that contributed to the development of the field because they are cited in the references of the articles but are not indexed in the databases used in the present study.

This means that there are works cited by the authors of the articles compiled in WOS and Scopus that deserve recognition in the field but are not necessarily from journals present in the processed databases.

Among the articles, the work of Shane and Venkataraman (2000) is one of the first studies to introduce the concept of action-based entrepreneurship. For the authors, entrepreneurial action occurs through the emergence of a potential opportunity. In this regard, the authors identified a conceptual framework for entrepreneurial opportunities by individuals themselves, influencing the course of action in a particular venture through key factors such as values, beliefs, information channels, cognitive properties, the nature of the opportunity, and individual differences among those involved in this process.

In this sense, the work of Sarasvathy (2001) stood out as it initiated discussions on the effectuation process. The author sought to understand how entrepreneurial actions emerge, proposing two effects for this occurrence: the effectuation process and the causation process.

Sarasvathy (2001) defined causation as the result of a logic of prediction, while the effectuation process was related to a logic of control. In the entrepreneurial process, individuals will guide actions based on these two logics, with the difference being that in causation, individuals will plan actions based on a predefined goal, choosing the most convincing and coherent alternatives for their venture. On the other hand, in the effectuation process, individuals will propose strategies based on the resources (human, financial, physical, technological, etc.) they have available. Thus, from an action, individuals will seek the means and alternatives to make it effective and real.

According to the author, effectuators are the actors congruent with the logic of entrepreneurship, as in the effectuation process, the individual plays the role of the decision-maker. For Sarasvathy (2001), the entrepreneurial process occurs through contingent interactions between the actions and the creativity of effectuators and the aspirations of their partners in this process, be they

customers, investors, suppliers, or other types of strategic alliances. In this sense, it was understood that the logic of effectuation contributes by showing that entrepreneurial action often does not follow a predefined path based on logical and causal reasoning but rather through the connection between causal reasoning and the intrinsic logic of human action.

The popularization of many studies or simply the "fad" of designating personalities as entrepreneurs and, consequently, the emergence of new businesses, revealed the empirical fragility and conceptual limitations of entrepreneurship theories (Lacerda & Andrade, 2021). Any achievement or opening of a new business is considered "entrepreneurial." Thus, entrepreneurial action emerged as a promising field open to theoretical and empirical possibilities for a more precise understanding of the entrepreneurial process.

It is important to emphasize the importance of co-citation analysis for the field of entrepreneurial action since, in addition to directing the documents of more established authors, these studies are developed in the literature with important information that can be used by other researchers. This does not mean that previous approaches are not relevant; on the contrary, the intention was to demonstrate that studies on entrepreneurial action tend to complement the theories already worked on regarding entrepreneurship, opening up new possibilities for discussion. In this sense, the developments confirm how an emergent act in an organizational environment can indeed be considered entrepreneurial not only based on the presence of a heroic personality that generates economic profit in a particular venture but also through the evidence of the creation of a new business.

Categories and thematic analysis

It was observed that studies on entrepreneurial action were directly related to case studies that reported the emergence of entrepreneurial actions in organizations, emphasizing the concentration of studies in the fields of management and business. However, the extensive use of this methodology contributed to the conceptual fragility of the field, reporting only the achievements and actions at the expense of the antecedents and variables present in the entrepreneurial journey.

According to the analysis of thematic categories and the mapping of keywords that appeared most prominently in the analyzed works in the databases, it was emphasized that the terms "entrepreneurship" and "entrepreneurial action" are complementary themes, as addressed in the studies. Specifically, studies on entrepreneurial action enabled the delineation of research focused on aspects of the entrepreneurial process, such as entrepreneurial orientation, opportunity, creativity, innovation, institutional logics, and the effectuation process. These were keywords that repeatedly appeared in the analysis.

In this regard, it was observed that the field of entrepreneurship presented broad perspectives and differentiated approaches that sought to bring conceptual, theoretical, and empirical contributions to this area. However, it is necessary to evaluate the main results found in this study, the interrelationships between the highlighted categories, and the main possibilities for the field of entrepreneurial action, proposing a synthesis matrix for a better understanding of the phenomenon.

Synthesis matrix

This section emphasizes contemporary studies that understood entrepreneurship as a process (McMullen & Shepherd, 2006; Alvarez & Barney, 2007; Klein, 2008; Teece, 2012; Watson, 2013; Spedale & Watson, 2014; Dimov & Pistrui, 2020; Lacerda & Andrade, 2021; Rapp & Olbrich, 2021). It was found that this approach focuses on the practices resulting from the entrepreneurial process,

as opposed to economic and behavioral perspectives that sought to outline the profile of individuals considered entrepreneurs and those businesses that succeeded, meaning they achieved good economic results for the entrepreneurs.

Considering the seminal works, it can be seen that action is the necessary means for entrepreneurship to happen in practice (McMullen & Shepherd, 2006; Alvarez & Barney, 2007; Klein, 2008; Frese, 2009; Greenman, 2013; Townsend et al., 2018; Dimov & Pistrui, 2020; Rapp & Olbrich, 2021), which is supported by the increase in publications involving the entrepreneurial action theme in the last four years.

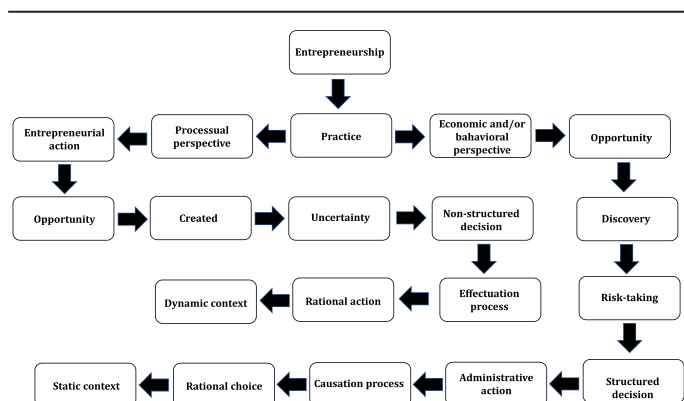
From the mapping of keywords, it was identified that these studies worked with theoretical and empirical aspects involving entrepreneurial actions and their relationships with organizational performance, effectuation and causation processes, innovation, and issues related to uncertainty, opportunity creation, and opportunity discovery.

It was found that opportunity is a variable present in a large part of the studies on entrepreneurial action. Most discussions converged on discovered opportunities, as can be seen in the keyword mapping. However, pioneering studies emphasized that opportunities can be created or discovered (Alvarez & Barney, 2007). Nevertheless, no matrix was found in the studies in the investigated database that could differentiate how opportunities arise in the entrepreneurial process.

Through an exchange between the early theories developed and the new developments in the field in the last four years, it was found that Sarasvathy's (2001) causation and effectuation theory provided findings that were reconciled with the theory of entrepreneurial action in emerging research. By differentiating between a created opportunity and a discovered opportunity, it was inferred through this study that entrepreneurial actions are more compliant with the theory of creation and, consequently, with the effectuation process. We dare say that entrepreneurial action can be understood through the proposed synthesis matrix, illustrated in Figure 7.

Figure 7

Synthesis matrix of entrepreneurial action



Note: Elaborated by the authors.

The main contribution of the presented synthesis matrix is in differentiating entrepreneurship as a practice, whether it is focused on understanding the experiences and performance of organizations in pursuit of economic profit or on identifying who the entrepreneurial individuals are, in contrast to understanding entrepreneurship as a process, emphasizing actions and results generated by the entrepreneurial process. In this sense, in addition to what has been explained, the proposed matrix also offered findings that can contribute to the differentiation between entrepreneurial action and administrative action.

It was found that, from a discovered opportunity, individuals take on a risk-taking role, as there are known and structured means to outline alternatives to achieve the expected results for their businesses (Sarasvathy, 2001; McMullen & Shepherd, 2006; Alvarez & Barney, 2007; Klein, 2008). Thus, it was inferred that the action is taken based on a rational choice, concerning the goals which are already known by the organization. As such, we risk saying that the action in this scenario will have an administrative origin, as it is already embedded in organizational strategies and objectives, resulting from a causation process in which individuals act according to a logic of prediction and control.

What was observed is that discovered opportunities can, to some extent, lead to entrepreneurial actions as they propose the start of something new or the entry of a business into the market (McMullen & Shepherd, 2006; Alvarez & Barney, 2007; Townsend et al., 2018; O'Shea et al., 2021; Wood et al., 2021; Angus et al., 2022). This is because, in the context of discovery, opportunities precede actions (Sarasvathy, 2001). However, it was inferred that when these actions become habitual and routine, they tend to become administrative actions, as they aim to generate gains for entrepreneurs, being compliant with well-structured and static contexts.

On the other hand, the theory of creation considers that action precedes the exploitation of an opportunity (Alvarez & Barney, 2007). Opportunity is centered on uncertainty; individuals operate in an uncertain and unstructured environment, and they must use the means available to achieve unpredictable results for the situation at hand (McMullen & Shepherd, 2006; Alvarez & Barney, 2007; Townsend et al., 2018; O'Shea et al., 2021; Wood et al., 2021).

In this scenario, decision-makers operate through rational and planned action, not just choice. This idea is related to the effectuation process, in which the available means must be suitable for facing a dynamic, uncertain, and often poorly structured environment (Sarasvathy, 2001). The entrepreneurial journey cannot be predefined because effectuators do not have a predefined objective; they create opportunities (McMullen & Shepherd, 2006; Alvarez & Barney, 2007; Klein, 2008). Effectuators have contingent and vague aspirations because it is not possible to measure the desired effects of their actions (Sarasvathy, 2001). In this perspective, it is inferred that entrepreneurship can be an integral part of other practices beyond creating new businesses, such as reformulating procedures, creating strategies, managing projects, and other achievements.

Therefore, to contribute to the development of a conceptual framework for entrepreneurship, researchers need to understand the entire entrepreneurial process so that entrepreneurial actions can be genuinely identified as the sufficient and necessary means for entrepreneurship to actually happen. In this perspective, this finding can contribute to a more robust conceptual development of the subject, as it allows for the intertwining of theory and practice as evidenced in publications.

FINAL REMARKS

This research conducted an analysis of the international scientific production in the field of entrepreneurial action. It also explored the temporal trends in international scientific production and the countries that published the most on the subject, the citations of selected articles, author productivity, as well as authorship and co-authorship networks, and finally examining the categories and keywords of the publications.

The main findings of this research indicate that the field of entrepreneurial action is still in its early stages of development and requires further efforts to build a solid and well-defined conceptual framework around the phenomenon. It was observed that there are promising studies on the subject that have enabled interaction between the concept of entrepreneurial action and various areas

of knowledge. However, the multifaceted nature of the field has contributed to the lack of a clear conceptual framework, allowing empirical studies from various areas to be categorized as entrepreneurial, often without considerable scientific rigor and without a theoretical-empirical connection.

To contribute to the advancement of knowledge about the entrepreneurial action phenomenon and to mitigate the effects caused by the lack of a well-defined conceptual framework in the field, a synthesis matrix was proposed based on the results of this research. The synthesis matrix on entrepreneurial action can provide theoretical and empirical extensions to the field, given the possibilities highlighted. In this sense, it is suggested that future studies investigate the entrepreneurial action as the epicenter of researched on entrepreneurship, considering that entrepreneurship actually happens stemming from an action.

Therefore, future studies are suggested to delimit the context in which entrepreneurial action emerges and then identify the attribute of opportunity that drove entrepreneurial action, whether created or discovered. In addition, there is an invitation to identify the actors who participated effectively in the entrepreneurial process and map the results and benefits generated from the collective efforts that led to the emergence of entrepreneurial action.

Furthermore, due to the scarcity of quantitative studies on the subject, the proposition of measurement scales is suggested to understand entrepreneurial action to generate theoretical-empirical connection about the subject, opening up possibilities for application and validation in different contexts and areas. To achieve this, it is necessary to investigate the antecedents of entrepreneurial action in different contexts.

From a theoretical and academic perspective, this article aimed to identify the main areas that proposed the development of the entrepreneurial action concept and, consequently, it was possible to outline the main conceptual categories defined around the subject and build the proposed synthesis matrix. From an empirical perspective, the contributions go beyond academic gains, as understanding the field of entrepreneurial action can generate gains for society. Thus, these gains can be achieved through the development of measurement scales for entrepreneurial action, as suggested in this study, and by expanding the theoretical and empirical interconnection of the subject.

Moreover, this study was structured to be replicated in future studies, and it could even use other databases. The proposed approach provides valuable insights for both experienced researchers and newcomers, given the possibilities highlighted and the delineation of the main scientific and conceptual structures outlined, serving as a guide for those entering into research on entrepreneurial action.

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Conflict of interest statement

The authors declare that there is no conflict of interest. An earlier version was presented at SemeAd 2021 and nominated for the REGEPE Fast-track. https://login.semead.com.br/24semead/anais/resumo.php?cod_trabalho=1056

Authors' statement of individual contributions

Roles	Contributions			
	Ávila M. A.	Andrade D. M.	Silva C de A.	Gonçalves V. B.
Conceptualization	■			
Methodology	■			
Software	■			
Validation	■			
Formal analysis	■			
Investigation	■			
Resources	■			
Data Curation	■			
Writing - Original Draft	■			
Writing - Review & Editing	■	■	■	■
Visualization	■	■		
Supervision	■	■		
Project administration	■	■		
Funding acquisition	■	■		

Note: Acc. CRediT (Contributor Roles Taxonomy): <https://credit.niso.org/>

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