DISCUSSION

TRENDS IN PERFORMANCE RESEARCH IN RELATION TO BUSINESS STRATEGY: BIBLIOMETRIC ANALYSIS AND TEXT MINING

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Abstract

This literature review aims to assess the evolution of performance monitoring articles in relation to the business strategy based on an overview of articles indexed in the WoS and Scopus databases. The initial dataset of articles was obtained based on carefully developed keywords. In the second phase, we restricted the selection to business and management journal articles and reviews written in English before 2019. The authors simultaneously reviewed the abstracts of all 571 articles in the third phase of the study. These were subsequently re-read and limited; thus, the final dataset for further analysis includes 157 articles published between 1983 and 2019. The most important result is that the field of business strategy and performance is not subject to trends. While in the field of business strategy the literature is still dominated by generic strategies according to Porter and the strategy typology according to Miles and Snow, in the field of performance measurement we identified the market position (sales volume, growth in sales volume, etc.) and profitability (profit margin, return on assets, etc.) as the dominant method.

Implications for Central European audience: Despite a considerable amount of work focusing on bibliographic analysis, there remains a lack of literature on the link between strategy and performance. The paper brings potential value for the Central European audience by drawing attention to the systematisation of knowledge in the field of performance articles and its trends in relation to the field of business strategy. The overview of the theoretical frameworks contributes to a better orientation of the current state of the art and creates opportunities for future research.

Keywords: Literature review; bibliometric analysis; text mining; performance; business strategy

JEL Classification: M10, M20, L10, L21

Introduction

Performance is generally referred to in academic literature in many ways, such as organization performance, financial performance, firm performance, business performance, or economic performance. "An organization is a voluntary association of productive assets, including human, physical and capital resources for the purpose of achieving a shared purpose" (Elisiva & Sule, 2015; Simani, 2017, p. 6). "Organization performance, therefore, comprises the actual output or results of an organization as a measure against its intended outputs" (Cavalieri et al., 2007; Pongatichat & Johnston, 2008; Simani, 2017, p. 6).

Many authors have been involved in measuring performance in relation to strategy. "Measuring organizational performance is a challenge. Indeed, what constitutes an effective strategy can depend on how performance is measured" (Cavalieri et al., 2007; Jusoh & Parnell, 2008; Pongatichat & Johnston, 2008; Parnell et al., 2015, p. 13). "The measurement of organizational performance is widely debated, with some scholars suggesting that different measures are appropriate for different strategies" (Hillman & Keim, 2001; Stede et al., 2006; Parnell et al., 2015, p. 13). The performance of an organization can be measured in various ways – using financial indicators, non-financial indicators or comprehensive approaches (strategic, managerial approaches, etc.).

Financial performance can be viewed in two ways: (1) indicators focused on financial success (profitability indicators, etc.); (2) indicators focused on business success (sales, market share). "Most business methods for evaluating the performance impact of strategy options today are related to financial analysis. Hereby, a strategy option is essentially seen as an investment in the company or strategic business unit, which is supposed to deliver a certain expected financial outcome. What is of interest is the specific impact caused exclusively by the proposed strategy option" (Wunder, 2016, p. 257). The specific focus varies according to the analyst, i.e., for whom the analysis is intended – manager/owner/creditor.

Financial performance can be defined as the ability to create added value – the direction to create value, otherwise, it can also be described as an indicator of EVA (economic value added) (Tukker & Tischner, 2017). To create value – profitability – is a basic prerequisite for successful activity (Wunder, 2016). At the same time, it fulfils another basic goal of financial management – liquidity. Concurrently, adequate indebtedness and an optimal capital structure are also needed (Piper & Weinhold, 1982; Asquith & Weiss, 2016). Therefore, these are areas of financial management that intersect and influence the level of financial performance, which can be quantified using the ratios of financial analysis.

The starting point of strategic business performance management is to define a strategy that expresses what the company wants to achieve in the future and through what activities. In the last two decades, more and more attention has been paid to the issue of performance measurement as a tool for strategy implementation and revision. Therefore, we are concerned with identifying the current characteristics of performance articles in relation to business strategy using bibliometric analysis. "Bibliometric analysis is a popular and rigorous method for exploring and analysing large volumes of scientific data" (Donthu et al., 2021, p. 1; Alam et al., 2021). "The bibliometric methods to assess performance are generally divided into three types: review studies, evaluative approaches, and relational approaches.

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The techniques of all approaches have the same goal: to classify the research performance/productivity of authors, institutions, or journals" (Cardoso et al., 2020, p. 2).

Previous research in the field of performance bibliometric analysis has identified several research streams and trends. Nevertheless, no study focused on the overall review of journal articles devoted to performance in relation to business strategy was found. Wang et al. (2010) presented a detailed chronological survey of papers published in the journal titled Water Research, which has been published since 1967. The investigation reviewed publication patterns between 1967 and 2008. Raan (2014) conducted an advanced bibliometric analysis for the time span 2000-2010 using citation analysis to assess the international influence of scientific work in a reliable, transparent and objective way, particularly in the natural science and medical fields. Cardoso et al. (2020) aimed to evaluate the Portuguese scientific production within tourism, leisure and hospitality management. The time span was 1986-2020; 572 papers from 51 peer-reviewed Scopus journals were mapped through a mixed bibliometric analysis method. Baker et al. (2020) provided a bibliometric analysis of managerial finance between 1996 and 2019. The study used the Scopus database to analyse the most frequent authors in the area of managerial finance along with their affiliated institutions and countries. Baditoiu et al. (2021) used bibliometric analysis to qualitatively analyse 262 links from the Core Collection Database Web of Science (WoS). The dataset period was from 1999 to 2021. The focus of the study was on the co-occurrence of keywords, co-authorship and collaboration in the research area of integrated reporting and its performance, and reflected the most common concepts associated with the terms and authors, organizations and countries that had studied the topics (Baditoiu et al., 2021, p. 1). Francis et al. (2021) aimed to evaluate the publication of research articles on performance evaluation over the last 20 years (2001 to 2020). The bibliometric analysis method was conducted on articles obtained from the Scopus database with the majority of the performance appraisal studies conducted in the medical sector. Alam et al. (2021) performed a bibliometric analysis in the area of banking performance. The data for their analysis were from the Web of Science with a research time span of 1972–2021. The focus of Huang et al. (2021) was on weak measurement. The data used in their study were retrieved from the Web of Science (WOS). The aim was to provide a report on scientific publication in research on weak measurement over the past decades (2000–2020).

Even though several articles have been written on the topic of bibliometric analysis, according to our research of previous bibliometric articles, the main research gap is that we did not find any article focusing on performance in relation to business strategy. This is the main reason why we chose this topic. We also observe a gap in these sub-points:

- Articles are based on one database – WoS/Scopus.
- One industry/journal focus was identified.
- For most articles, the dataset is based on a shorter period.

This paper contributes to the systematisation of knowledge in the field of performance articles and its trends in relation to the field of business strategy. To reach this goal, we make a systematic literature review of the application and conceptual development of performance in the literature. We use bibliometric and text mining analyses to assess the trends in the

development of performance articles and the trends in the use of the theory in empirical studies.

Our goal is to answer the following research questions:

1. What is the overall trend of interest in the area of performance and what is the contribution of individual countries, major journals and authors?

2. What are the most relevant words for the performance articles from several perspectives and what types of research have been published in this area by the end of 2019?

Other research questions to be addressed:

- What types of documents and sources are often used in article publications?
- What is the trend of publication in performance articles each year?
- Which country has the highest publication of articles?
- Which institution has the most influential publications?
- Who is the most effective and productive author?
- Which sources are most active in publishing articles?
- What is the status of the latest article citation metrics analysis?
- Which article is the most popular and has the highest number of citations?
- What are the most popular author keywords in article publishing?

The terminology for business strategy is diverse as the use is according to the specific author. For example, Porter uses the term competitive strategy while Miles and Snow use business or business-level strategy. For unification in the following text, we use the unified term "business strategy".

1 Literature Review

This literature review aims to assess the evolution of the characteristics of performance articles in relation to business strategy. Therefore, the basic task is to identify keywords that characterise both areas and that would allow finding appropriate textual resources. The following paragraphs briefly introduce the main approaches to performance articles and frameworks related to business strategy.

Theoretical literature distinguishes the corporate-level strategy, addressing the question of where to compete, and business-level strategy, following the question of how to compete (Hofer & Schendel, 1978). Although Beard and Dess (1981) demonstrated that both levels of strategy have a significant impact on performance, the following text mainly focuses on business-level strategy. From this perspective, a competitive advantage is a prerequisite for success and its essence is that an organisation does something better or differently than its competitors (Barney, 1991; Hill & Jones, 2012). This view defines the concepts underlying the first set of keywords – business strategy, business-level strategy and competitive strategy.

Discussions of theoretical frameworks in the field of strategy draw on a broad stream of competing ideas (Ghemawat, 2002; Reeves & Whitaker, 2021; Angel Guerras-Martin et

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al., 2014). The origins of strategic management as an academic discipline can be traced back to the first half of the 20th century, although the birth of the modern concept is usually associated with the 1960s (Furrer et al., 2008).

Further development of the topic occurred in the 1960s-1980s, when some researchers focused their attention on organizational processes, such as Mintzberg (1978) and Mintzberg and Waters (1985), while others focused on the relationship between strategy and performance (Bain, 1968). This industrial organization (IO) stream, which was strongly influenced by Miles and Snow (1978) and Porter (e.g., 1980, 1985), is based on a structure-management-performance logic and is mainly oriented on the relationship between the firm and its competitive environment. While Miles and Snow (1978) came up with the adaptive cycle and strategic typology (analysers, prospectors, defenders and reactors), Michael E. Porter (1980) formulated the so-called generic strategies (low cost, differentiation and focus strategies) based on previous works (e.g., Bain, 1956, 1968). Therefore, their contribution is a further resource for keyword search. The reconstructionist view can be seen as a response to hyper-competition, which is related to the shifting of industry boundaries or the search for new market spaces (Kim & Mauborgne, 2005; Angel Guerras-Martin et al., 2014). Thus, based on a rethinking of the product-customer interaction through a redefinition of the value curve and the building of new value chains, the Blue Ocean Strategy (BOS) was formed (Kim & Mauborgne, 2005) and, therefore, belongs to the keywords.

Whereas the previous paradigm sought a source of competitive advantage in the external environment, the following approaches focus on the relationship between a company's internal resources and performance. A more general view of the issue follows transaction cost economics (TCE) and agency theory (AT) (Fama, 1980), following the influence of company organizational structure and the impact of separation of ownership and control in the case of large companies. As another approach, a resource-based theory has been developing since the 1980s. Within this approach, we can identify the resource-based view (RBV), which focuses on strengths and weaknesses in general (Wernerfelt, 1984, 1995; Priem & Butler, 2001), and the knowledge-based view (e.g., Grant, 1996; Spender, 1996) or dynamic capabilities approach (e.g., Teece, 2014), which is more concerned with the development of the knowledge society and the specificities of certain industries. The usage of the RBV directs managers to formulate strategies to make the best use of internal resources and core competencies to improve their competitive position (Barney & Arikan, 2001). However, the scope of the RBV includes both a detailed resource analysis, which from the perspective of our paper does not represent the firm's strategy per se and the formulation of strategy or competitive position, thus representing another source of keywords.

As summarized by Furrer et al. (2008), performance is one of the fundamental bases influencing both the formulation of the theoretical foundations of strategy and its practical application. The approach to performance measurement varies from detailed analysis based, for example, on the balanced scorecard methodology (Kaplan & Norton, 2001) to analysis of individual aspects of performance, e.g., financial, internal business, customer and innovation and learning perspective (Neely et al., 1995). However, from a literature review perspective, it is clear that all of these guidelines use the term performance, which means that it is the ideal keyword for this area.

2 Methods and Data

Due to the specifics of management and organizational studies, the revised principles of systematic literature review (Hart, 1998) published by Denyer and Tranfield (2009) were used as a basic method to understand the nature of the study area. The advantage of a literature review is its ability to capture all relevant studies on a given issue. The main objective of this paper is to map the main approaches to performance measurement concerning business strategy, so we complemented the bibliometric analysis with a text-mining analysis of the available articles.

The analysis was conducted in five phases: study design; preliminary and final data collection; bibliometric analysis and network and content analysis.

To obtain an overall overview, in the **first phase** we included the study of all articles on business strategy simultaneously tracking the impact on performance published in high-quality journals included in the WoS (SCI-EXPANDED, 1945–2019 and SSCI, 1977–2019) and Scopus (1960–2019) collections. An important prerequisite for obtaining a relevant database of articles is the selection of keywords. Based on the main objective of the study, we selected all the collocations used for business strategy along with performance as keywords. (Carpenter & Sanders, 2008; Ghemawat, 2002; Hill & Jones, 2012; Hitt et al., 2015; Pertusa-Ortega et al., 2009; Zollo et al., 2018), namely: "business strateg*", "business level strateg*", "competitive strateg*" and "performance". In addition, we added as additional keywords attributes and phrases used by other prominent authors such as Miles and Snow (1978), Porter (1980, 1985), Kim and Mauborgne (2005) and others. Thus, the following keywords were included: "generic strateg*", "low-cost strateg*", "differentiation strateg*", "prospector*", "strategic position*", "strategy choice*", "strategy type*", "resource-based view", and "blue ocean strateg*". We stopped adding more keywords when the addition of another keyword generated zero articles in the WoS and Scopus databases.

In the **second phase**, we restricted the selection to business and management journal articles and reviews written in English before 2019. As most of the terms used as keywords can have a very general meaning, the initial set contained a remarkably high representation of articles completely outside the focus of our review. Therefore, we tightened the selection by requiring the simultaneous presence of two of the above keywords or collocations related to strategy and the word "performance" at the same time. By doing so, after merging the WoS and Scopus databases and filtering out duplicate articles, we obtained 571 articles. The data are current as of the end of May 2020.

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Figure 1 / Overview of obtained articles

- 571 • Simultaneous presence of two of the keywords or collocations related to strategy and the word "performance" at the same time.

- 157 • Final dataset for performance research
  • Performance evaluation in relation to business-level strategy
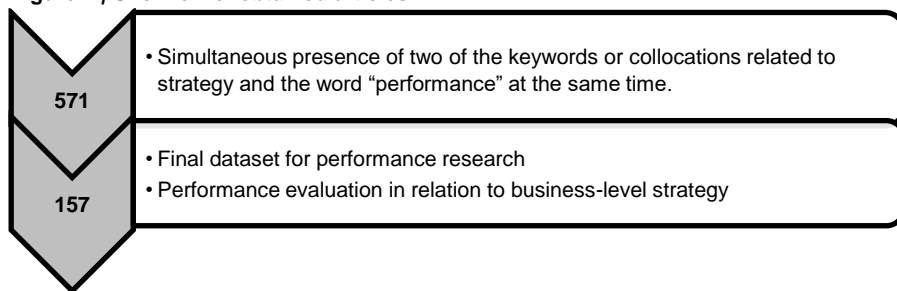
Source: Own elaboration

Because the dataset still contained a significant number of articles from different fields of science, the authors simultaneously reviewed the abstracts of all 571 articles in the **third phase** of the study. In the case of an ambiguous conclusion, the authors checked the full text and, solely based on consensus, excluded articles that were not relevant to the selected area. Most of the rejected articles were not related to business strategy per se but focused on IT implementation, human resource management strategy, environmental strategy and product positioning. We also excluded articles that only mentioned the concept of performance but did not further address this area. Similarly, we excluded articles focused on strategic analysis without any further link to business strategy. Thus, the final set for further analysis includes 157 articles (Figure 1) and the structure of the dataset is summarised in Table 1. A detailed audit of both WoS and Scopus databases showed that two articles are in WoS only and 50 articles are in the Scopus database only, whereas 105 articles are included in both databases. The result indicates that the most influential journals are indexed in both the WoS and Scopus databases.

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Table 1 | Final dataset structure

Description	Results
MAIN INFORMATION ABOUT DATA	
Timespan	1983-2019
Sources (journals, books, etc)	91
Documents	157
Average years from publication	12.7
Average citations per document	53.2
Average citations per year per doc	3.518
References	7365
DOCUMENT TYPES	
Article	145
Article; proceedings paper	3
Review	9
DOCUMENT CONTENTS	
Keywords Plus (ID)	357
Author's keywords (DE)	380
AUTHORS	
Authors	314
Author appearances	375
Authors of single-authored documents	21
Authors of multi-authored documents	293
AUTHOR COLLABORATION	
Single-authored documents	29
Documents per author	0.5
Authors per document	2
Co-authors per documents	2.39
Collaboration index	2.29

Source: Own elaboration

The dataset created in the third phase became the basis for the descriptive bibliometric analysis conducted in the **fourth phase**. This phase examined the quantitative aspects of the bibliographic material (Broadus, 1987). Bibliometric analysis is particularly useful when dealing with many highly structured materials (Aria & Cuccurullo, 2017). For the practical realisation of the descriptive bibliometric analysis and network analysis (phases four and five), we employed 'biblioshiny', a web-based interface of the R-package (bibliometrix 3.0), and text mining based on the simultaneous reading of full-text articles.

3   Descriptive Data Analysis

Figure 2 shows the annual scientific production and growing trend in the number of performance-focused articles published between 1983 and 2019. The stable growth indicates an interest among academics, which reflects the importance of the topic. The otherwise stable curve shows a significant increase in 2010. The development of publications is further analysed in terms of country, journals, authors, citations, approaches and keywords.

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Figure 2 | Number of articles published from 1983 to 2019
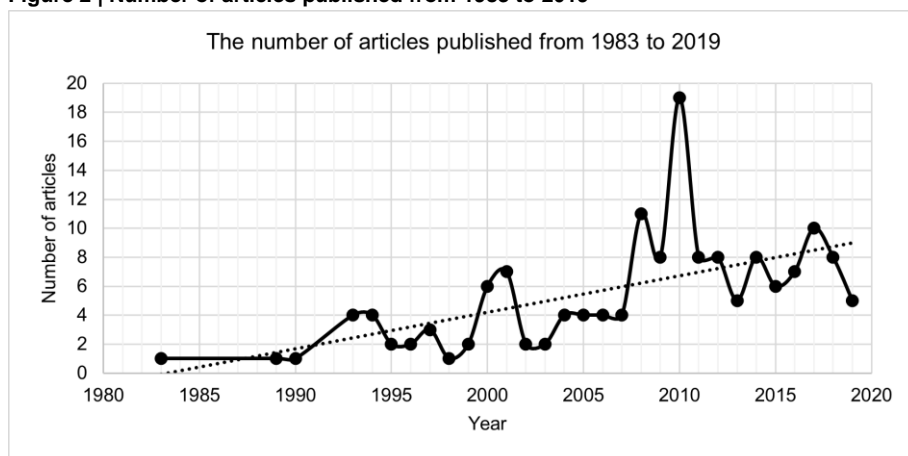
Source: Own elaboration

3.1 Most productive countries

Authors from the dataset of 157 publications represent 32 countries, of which 15 countries are represented by only one article. The dominant position is clearly held by the USA with 60 articles, which corresponds to a 38% representation in the entire dataset.

Table 2 shows the productivity of countries by the author. This effect is highlighted by the ratio of single-country publication (SCP) to multi-country publication (MCP), which shows that almost 82% of these articles were written based on international cooperation. The UK even reports all the articles included as international cooperation. This case is repeated for another 19 countries (including countries that reported only one article).

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Table 2 | Most productive countries based on corresponding author affiliation

Country	Articles	Freq	SCP	MCP	MCP_Ratio
USA	60	0.38217	11	49	0.817
China	15	0.09554	2	13	0.867
Spain	11	0.07006	1	10	0.909
United Kingdom	11	0.07006	0	11	1
Canada	8	0.05096	1	7	0.875
Malaysia	6	0.03822	2	4	0.667
Australia	4	0.02548	1	3	0.75
Sweden	4	0.02548	0	4	1
Georgia	3	0.01911	1	2	0.667
Greece	3	0.01911	0	3	1
India	3	0.01911	0	3	1
Korea	3	0.01911	0	3	1
Turkey	3	0.01911	0	3	1
France	2	0.01274	1	1	0.5
Italy	2	0.01274	0	2	1
Netherlands	2	0.01274	0	2	1
Peru	2	0.01274	0	2	1
Austria	1	0.00637	0	1	1
Bangladesh	1	0.00637	1	0	0
Brazil	1	0.00637	0	1	1

Note: SCP = single-country publication; MCP = multi-country publication

Source: Own elaboration

3.2 Most relevant sources

There are 91 journals in the complete dataset (Table 1), but only ten are represented by more than three articles. According to Table 3, the first two places with the same number of articles were occupied by the Journal of Business Research and Management Decision. The Journal of Business Research focuses on the application of business research theory to current business situations (Elsevier, 2022). Management Decision deals with management science and operations research. The third place was taken by the Strategic Management Journal, which again focuses, as the name suggests, on strategic management. This again results in a strong link between performance and strategy.

Table 3 below presents the distribution of articles across journals and their metrics. These indices are used for both author evaluation (author-level metrics) and article evaluation (article-level metrics), and also for journal evaluation (journal-level metrics). "Journal-level metrics are used to evaluate an academic journal's impact and quality. Intended to reflect the place of a journal within its field, relative difficulty of being published in that journal, and the

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prestige associated with it" (Whitmire, 2021). "Although originally conceived as an author-level metric, the h-index (and some of its numerous variants) have come to be applied to higher-order aggregations of research publications, including journals" (Elsevier, 2022). "Article-level metrics (ALMs) refer to a whole range of measures that can provide insights into the "impact" or "reach" of an individual article" (Springer Nature Switzerland AG, 2022). "Author-level metrics are citation metrics that measure the bibliometric impact of individual authors" (Sgourakis, 2021). "Author metrics are used to track how often an author's work is cited, and demonstrate the reach and impact of a researcher's work, for use in grant applications, tenure, promotion and performance reviews" (Fisher, 2022). There are many variations of author-level metrics but H-index is the best-known author-level metric (Sgourakis, 2021).

Table 3 | Distribution of articles across journals (1983-2019)

Sources	No. of articles	Total citations	h_index	g_index	m_index	Publication year
Journal of Business Research	12	487	11	12	0.39	1995
Management Decision	12	453	11	12	0.42	1997
Strategic Management Journal	8	1816	8	8	0.20	1983
International Journal of Human Resource Management	7	226	6	7	0.27	2001
Industrial Marketing Management	6	231	6	6	0.29	2002
British Journal of Management	4	147	4	4	0.15	1997
International Journal of Operations & Production Management	4	238	4	4	0.29	2009
Journal of Management	4	204	4	4	0.15	1996
European Journal of Marketing	3	95	3	3	0.23	2010
Journal of Strategy and Management	3	48	2	3	0.15	2010
Academy of Marketing Studies Journal	2	2	1	1	0.13	2015
Decision Sciences	2	373	2	2	0.07	1993
IEEE Transactions on Engineering Management	2	45	2	2	0.14	2009
Information Systems Research	2	425	2	2	0.09	2001
Journal of Business Venturing	2	412	2	2	0.07	1994
Journal of International Marketing	2	102	2	2	0.13	2008
Journal of Management Studies	2	143	2	2	0.07	1996
Journal of Marketing	2	743	2	2	0.09	2000
Journal of Small Business Management	2	116	2	2	0.09	2001
Journal of Strategic Information Systems	2	347	2	2	0.09	2001

Note: These are the most relevant sources.

Source: Own elaboration

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3.3 Most relevant authors

Table 4 below shows the most productive authors. With 13 articles and 7.83 fractionalised articles, J. A. Parnell is by far the most productive author. His professional activities mainly focus on strategic and crisis management. In this sample, these are mainly empirical studies focusing on the strategy-performance relationship. However, the number of articles does not mean a real impact, which can be observed, for example, through the citation of the article. Another part is devoted to this parameter – the most influential sources, where Miles and Snow appear in the first place, and Porter with his two articles completes the hypothetical trio. Parnell did not appear among the top twenty quoted.

Table 4 | Most relevant authors

| Authors	Articles	Articles fractionalized
Parnell J.A.	13	7.83
Acquaah M.	6	5.00
Olson E.M.	6	2.25
Slater S.F.	6	2.25
Claver Cortes E.	4	1.33
Molina Azorin J.F.	4	1.33
Hult G.T.M.	3	0.92
Jusoh R.	3	1.83
Lester D.L.	3	0.83
Morgan R.E.	3	1.08
Pertusa Ortega E.M.	3	1.00
Croteau A.M.	2	1.00
Davis P.S.	2	0.58
Dowling M.J.	2	0.83
Ghobadian A.	2	0.67
Gokus O.	2	2.00
Hughes M.	2	0.75
Chen C.J.	2	0.58
Koseoglu M.A.	2	0.75
Li Y.	2	0.58
Long Z.	2	0.58
McGee J.E.	2	0.83
Nandakumar M.K.	2	0.67
O'Regan N.	2	0.67
Raymond L.	2	0.83

Note: These are the most locally cited authors.

Source: Own elaboration

Figure 3 below is based on the "most relevant authors" in Table 4 above and shows the productivity (in descending order) of the authors over the time of the published articles. A dot in the image represents one article; a circle represents two articles per year. The dark colour of the dot or circle refers to a higher overall citation rate of the article per year.

Figure 3 | Top authors' production over time of published articles
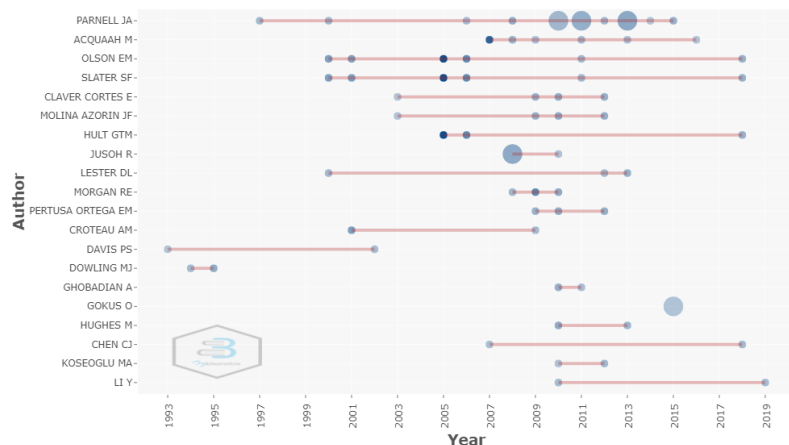
Source: Own elaboration

4 Content Analysis

4.1 Most relevant words – Keywords Plus vs. authors' keywords

"Authors' keywords are provided by the authors themselves, whereas Keywords Plus are generated by an algorithm, extracting words that frequently appear in the title's references and not necessarily in the title of the articles or as author keywords. Keywords Plus are as effective as author keywords in terms of bibliometric analysis investigating the knowledge structure of scientific fields, but are less comprehensive in representing an article's content" (Clarivate, 2018; Zhang et al., 2015).

Table 5 shows a comparison of the occurrence of the most common keywords and the authors' keywords in the analysed documents. Authors' keywords represent the most important topics contained in the article from the authors' point of view, using a limited number of words. Because Keywords Plus are automatically derived from the names of the sources cited by the article author, they are defined indirectly and indicate the main background behind the author. The most common keywords from the authors' point of view are clearly "performance, competitive strategy and business strategy". This suggests a close link between business strategy and performance issues. Keywords Plus were ranked first by two performance collocations and again by a strategy term – "Miles".

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Table 5 | Keyword occurrence analysis

Keywords Plus	Occurrences	Author keywords	Occurrences
organizational performance	27	performance	27
firm performance	24	competitive strategy	26
Miles	24	business strategy	24
management	22	strategy	14
business strategy	21	firm performance	11
environment	21	organizational performance	10
generic strategies	18	China	7
capabilities	17	performance management	7
orientation	17	competitive strategies	6
competitive strategy	15	marketing strategy	6
determinants	14	alignment	5
performance	13	business performance	5
antecedents	12	Ghana	5
firm	12	human resource management	5
fit	12	management strategy	5
impact	12	strategic groups	5
empirical-examination	11	balanced scorecard	4
industry	11	corporate strategy	4
resource-based view	11	differentiation	4
advantage	10	differentiation strategy	4

Source: Own elaboration

Figure 4 shows the development of keywords over the time of the published articles. For the sake of clarity, the authors' keywords for the year 2019 are displayed.
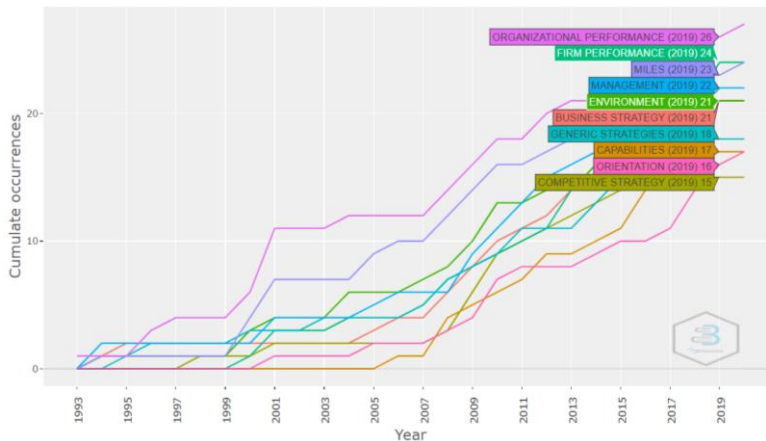
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Figure 4 | Development of authors' keywords over time of published articles
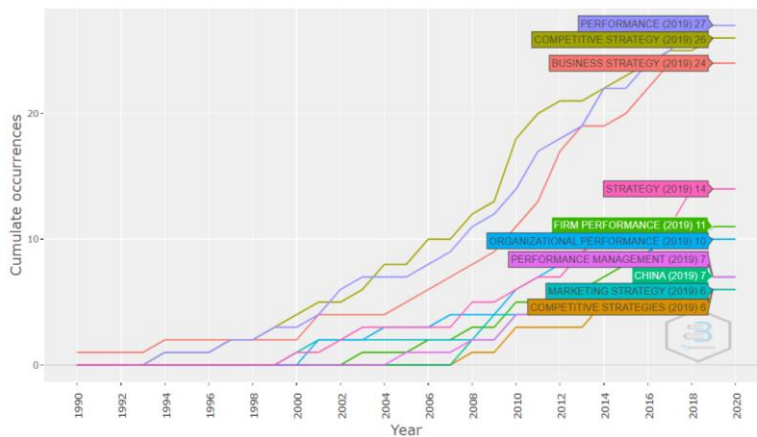
Source: Own elaboration

Figure 5 shows the development of keywords over the time of the published articles. For the sake of clarity, the **Keywords Plus** for 2019 are displayed.

Figure 5 | Development of Keywords Plus over time of published articles
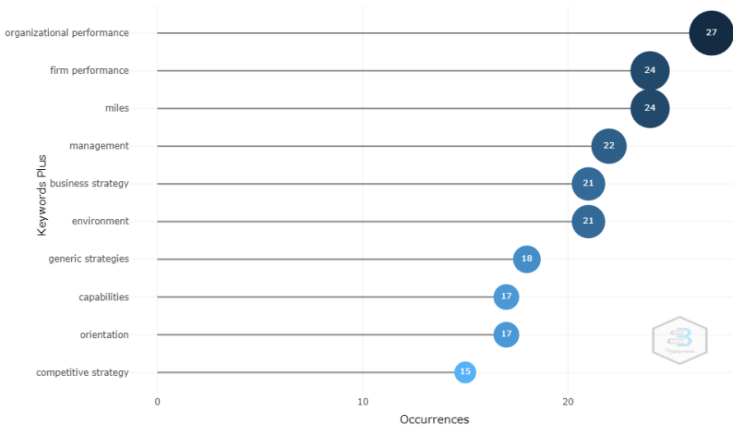

Source: Own elaboration

4.2 Most relevant words – four perspectives

The research area of the most relevant words is shown here from four perspectives – Keywords Plus, authors' keywords, title words and abstract words. Within Keywords Plus, "organizational performance" comes first, just before "firm performance" and "**Miles**" (Figure 6).

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Figure 6 | Most relevant words – Keywords Plus
(Number indicates the number of articles containing the keyword)

Source: Own elaboration

From the authors' point of view, this is "performance" followed by "**competitive strategy**" and "**business strategy**" (Figure 7). It is clear from this, as stated at the beginning, that business strategy appears in various word variations according to the authors' keywords (business/competitive, etc.). For title words and abstract words (Figure 8, Figure 9), the words "performance" and "strategy" clearly occupied the first places, only the order was reversed. These most relevant words show a strong bond between performance and business strategy and its economic logic, which is consistent with Hambrick and Fredrickson (2001).

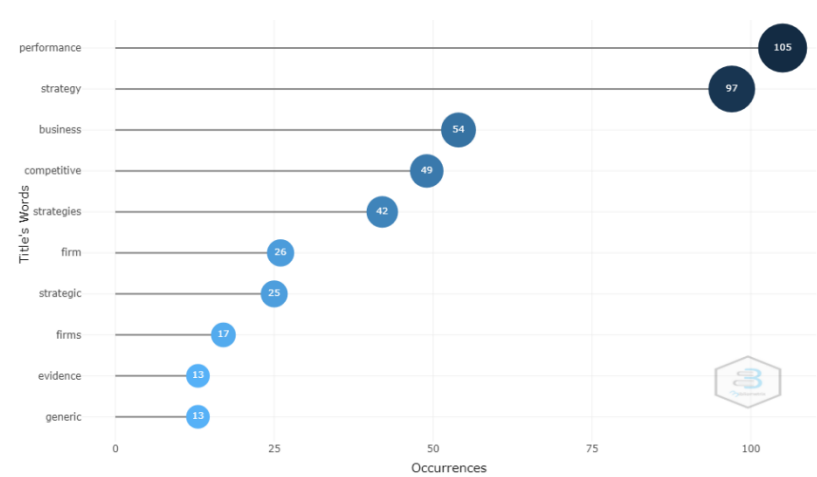**Figure 7 | Most relevant words – Authors' keywords**
(Number indicates the number of articles containing the keyword)
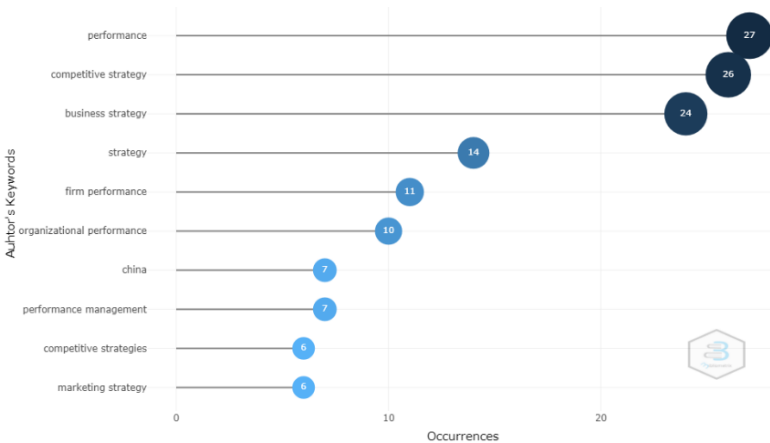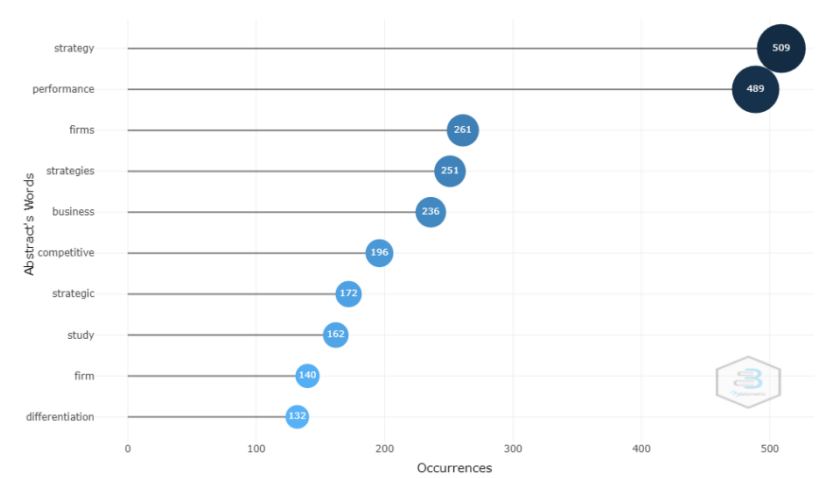

Source: Own elaboration

DISCUSSION

Figure 8 | Most relevant words – Title words
(Number indicates the number of occurrences in the titles of the articles examined)
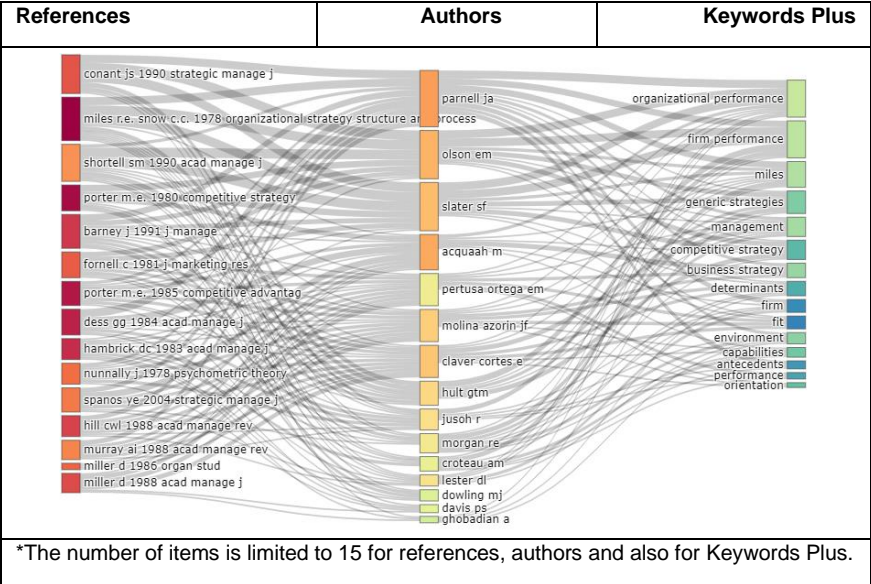

Source: Own elaboration

Figure 9 | Most relevant words – Abstract words
(Number indicates the number of occurrences in the abstracts of the articles examined)

Source: Own elaboration

4.3 Co-occurrence – three-field plots

Figure 10 | Co-occurrence of authors, references and Keywords Plus
(Connection between the most influential references and the authors and the keywords plus of the articles examined)

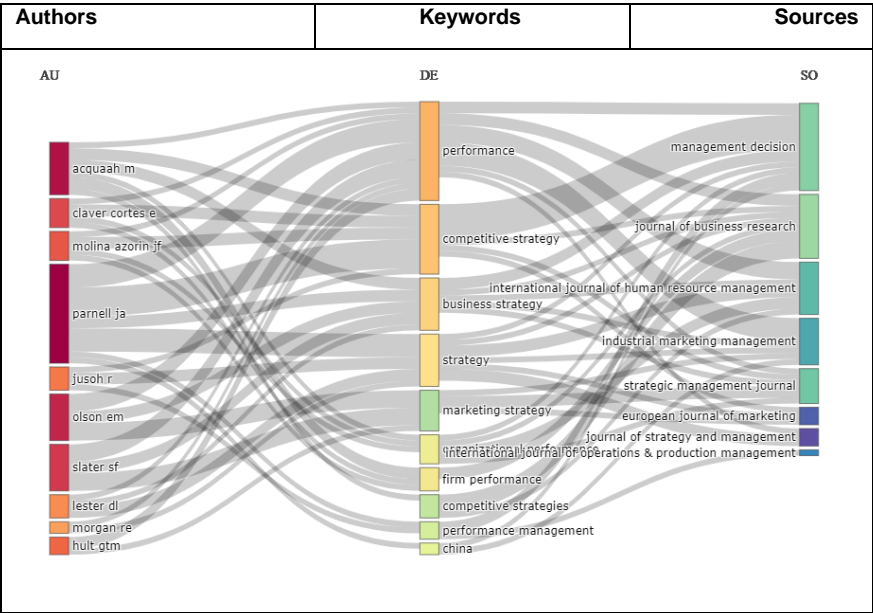*The number of items is limited to 15 for references, authors and also for Keywords Plus.

Source: Own elaboration

Figure 10 addresses the common occurrence of authors, references and Keywords Plus. There are several elements in the graph: the larger the size of the coloured rectangle, the higher the frequency of the particular element (references/authors/Keywords Plus). The connecting lines differ in thickness, which depends on the number of connections. The outcome is a dominance of the terms "organizational performance" and "firm performance" in the literature focusing on strategic management.

Figure 11 shows performance of the three-field plot – keyword occurrence analysis. There are several elements in the graph: the larger the size of the coloured rectangle, the higher the frequency of the particular element (references/authors/Keywords Plus). The connecting lines differ in thickness, which depends on the number of connections. The analysis of the common occurrence shows the connection between the most influential authors and subsequently between the keywords and the sources where the articles were published. The author Parnell was particularly concerned with the keyword "competitive strategy", which was dominant in the journal Management Decision.

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Figure 11 / Three-field plot – Keyword occurrence analysis
(Connection between the most influential authors and the keywords and the sources where the articles were published)

Note: Number of items limited to 10 in each group.

Source: Own elaboration

4.4 Most influential resource references

"Global citation score shows the total number of citations to a paper in the Web of Science Core Collection. Local cited references show the number of citations in a paper's reference list to other papers within the collection. Local citation score shows the count of citations to a paper within the collection. Number of cited references shows the number of cited references in the paper's bibliography" (Clarivate, 2019). Table 6 shows the most locally cited references. Miles & Snow and Porter, otherwise well-known business strategy typologists, are among the most cited sources.

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Table 6 | Most influential resource references (most locally cited references)

Cited References	Citations
Miles R.E., Snow C.C., 1978, Organizational Strategy, Structure, and Process	56
Porter M.E., 1980, Competitive Strategy	48
Porter M.E., 1985, Competitive Advantage	42
Dess G.G., 1984, Acad Manage J, V27, P467, DOI 10.2307/256040	41
Barney J., 1991, J Manage, V17, P99, DOI 10.1177/014920639101700108	32
Hill C.W.L., 1988, Acad Manage Rev, V13, P401, DOI 10.2307/258088	27
Conant J.S., 1990, Strategic Manage J, V11, P365, DOI 10.1002/SMJ.4250110504	26
Fornell C., 1981, J Marketing Res, V18, P39, DOI 10.2307/3151312	25
Nunnally J., 1978, Psychometric Theory	24
Miller D., 1988, Acad Manage J, V31, P280, DOI 10.2307/256549	23
Spanos Y.E., 2004, Strategic Manage J, V25, P139, DOI 10.1002/SMJ.369	23
Shortell S.M., 1990, Acad Manage J, V33, P817, DOI 10.2307/256292	22
Armstrong J.S., 1977, J Marketing Res, V14, P396, DOI 10.2307/3150783	21
Murray A.I., 1988, Acad Manage Rev, V13, P390, DOI 10.2307/258087	21
Podsakoff P.M., 2003, J Appl Psychol, V88, P879, DOI 10.1037/0021-9010.88.5.879	19
Snow C.C., 1980, Admin Sci Quart, V25, P317, DOI 10.2307/2392457	19
Dess G.G., 1984, Strategic Manage J, V5, P265, DOI 10.1002/SMJ.4250050306	18
Hambrick D.C., 1983, Acad Manage J, V26, P5, DOI 10.2307/256132	17
Campbell-Hunt C., 2000, Strategic Manage J, V21, P127, DOI 10.1002/(SICI)1097-0266(200002)21:23.0.CO	16
James W.L., 1995, Strategic Manage J, V16, P161, DOI 10.1002/SMJ.4250160206	16

Source: Own elaboration

4.5 Most globally cited documents

This citation analysis shows the impact of published documents by measuring the number of citations they received. Table 7 examines the most globally cited documents sorted by total citations per year. According to Table 7, the most globally cited document is Olson et al. (2005), where the authors present and test a model of adaptation to moderation, which assumes that the overall performance of the company is affected by how well the structural characteristics of the marketing organization (i.e., formalisation, centralisation and specialisation) and strategic emphasis on behaviour (i.e., customer, competitor, innovation and cost control) complement alternative business strategies (i.e., prospector, analyser, low-cost defender and differentiated defender). The second most cited is Spanos (2001) in terms of total citations. The article examines two main perspectives: Porter's framework of competitive strategy and a newer view of the company based on resources. A complex model is proposed, which elaborates the different causal logic of both views with regard to the conditions relevant to the success of the company. Acquaah (2007) (third place based on citations per year) examines how the relationship between social capital and an organization's performance depends on the organization's competitive strategic orientation. Sabherwal (2001) examines the impact of alignment on perceived business performance using Miles and Snow's popular business strategies of defender, analyser and prospector. Other globally cited documents had less than 20 total citations per year.

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Table 7 | Most globally cited documents

Paper	DOI	Total citations	TC per year
Olson EM, 2005, J Marketing	10.1509/JMKG.69.3.49.66362	439	25.8
Spanos YE, 2001, Strategic Manage J	10.1002/SMJ.174	469	22.3
Acquaah M, 2007, Strateg Manage J	10.1002/SMJ.632	320	21.3
Sabherwal R, 2001, Inform Syst Res	10.1287/ISRE.12.1.11.9714	423	20.1
Aulakh PS, 2000, Acad Manage J	10.2307/1556399	403	18.3
Lechner C, 2014, Int Small Bus J	10.1177/0266242612455034	143	17.9
Hallgren M, 2009, Int J Oper Prod Man	10.1108/01443570910993456	185	14.2
Matsuno K, 2000, J Marketing	10.1509/JMKG.64.4.1.18078	304	13.8
Vorhies DW, 2009, Strategic Manage J	10.1002/SMJ.798	167	12.8
Slater SF, 2006, Strategic Manage J	10.1002/SMJ.569	201	12.6
Chandler GN, 1994, J Bus Venturing	10.1016/0883-9026(94)90011-6	320	11.4
Rivard S, 2006, J Strategic Inf Syst	10.1016/J.JSIS.2005.06.003	180	11.3
Vickery SK, 1993, Decision Sci	10.1111/J.1540-5915.1993.TB00482.X	277	9.6
Qi YN, 2011, Decision Sci	10.1111/J.1540-5915.2011.00315.X	96	8.7
Slater SF, 2000, Strategic Manage J	10.1002/1097-0266(200008)21:83.3.CO;2-7	175	8.0
Croteau AM, 2001, J Strategic Inf Syst	10.1016/S0963-8687(01)00044-0	167	8.0
Slater SF, 2001, Strategic Manage J	10.1002/SMJ.198.ABS	166	7.9
Menguc B, 2008, Ind Market Manag	10.1016/J.INDMARMAN.2007.05.002	99	7.1
Ortega MJR, 2010, J Bus Res	10.1016/J.JBUSRES.2009.09.007	83	6.9
Guthrie JP, 2002, Int J Hum Resour Man	10.1080/09585190110085071	108	5.4
McGee JE, 1995, Strategic Manage J	10.1002/SMJ.4250160706	142	5.3
McCann JE, 2001, J Small Bus Manage	10.1111/0447-2778.00005	98	4.7
Galbraith C, 1983, Strategic Manage J	10.1002/SMJ.4250040206	176	4.5
Bantel KA, 1998, J Bus Venturing	10.1016/S0883-9026(97)00033-5	92	3.8
Boone C, 1996, J Manage Stud	10.1111/J.1467-6486.1996.TB00814.X	84	3.2

Note: Sorted by total citations per year.

Source: Own elaboration

4.6 Clustering

A cluster is a group of more than two objects divided from a statistical background. This figure was created to reveal connections between concepts and visualize major clusters. The unit of analysis is articles (documents), and coupling is measured by using the authors' keywords – the clusters labelled by the authors' keywords. In this case, we can see below (Figure 12) a clustering of dominant concepts related to competitive business strategy and performance, also in addition to another area (specific strategy of differentiation, marketing strategy, alignment or competitiveness, etc.).

Figure 12 / Clusters by document coupling
(Coupling is measured using authors' keywords – the clusters labelled by authors' keywords)
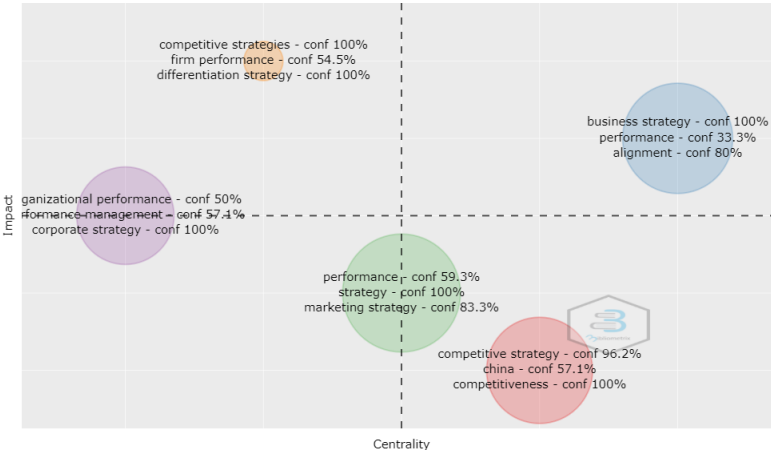
Source: Own elaboration

4.7 Intellectual structure

This co-citation network shows co-cited references/papers as nodes, the frequency of co-citation as weighted edges, and the shapes and colours of the nodes indicate three main communities in this case (Figure 13). Based on the papers, the important position of the three currents is evident: Miles (1978), Porter (1980, 1985) / Dess (1984), Barney (1991).

4.8 Conceptual structure

Co-occurrence analysis was designed by Callon et al. (1983). "Co-occurrence analysis is an approach that investigates the actual content of the document itself. It maps the pertinent literature straight from the associations of keywords shared by research articles" (Baker et al., 2020; Donthu et al., 2021; Alam et al., 2021, p. 5). The more authors have used a keyword, the bigger the bubble is. According to Figure 14, competitive strategy/business strategy and performance are the main ones. The terminology for business strategy is diverse as the use is according to the specific author. For example, Michael Porter uses the term competitive strategy while Miles and Snow use business or business-level strategy.

"Thematic maps are used to display geographical concepts such as density, distribution, relative magnitudes, gradients, spatial relationships and movements" (ZIFF DAVIS, 2022). The purpose of the map is to analyse the evolution of topics in the four different quadrants. Development degree (density) and relevance degree (centrality) are the main variables in Figure 15. Centrality measures the level of interactions between clusters, the degree to which a topic is connected to other topics. Density measures the degree to which keywords in a given cluster are connected. This map presents a co-occurrence network analysis that defines what the science in the field is talking about and the main topics that are consistent across the research.

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Figure 16 shows the evolution of themes in the period under review. In the period 1983–2010, organization performance was the most common theme. In contrast, business strategy was the most common theme in the second period. While research was mainly focused on strategy and performance in the first period shown, market orientation was presented prominently in the second period. There is a significant evolution of theme performance–strategy and the connection is being explored from different perspectives by many authors from around the world.

Figure 13 | Co-citation network
(Co-cited references/papers as nodes, the frequency of co-citation as weighted edges, and shapes and colours of nodes indicate main communities)
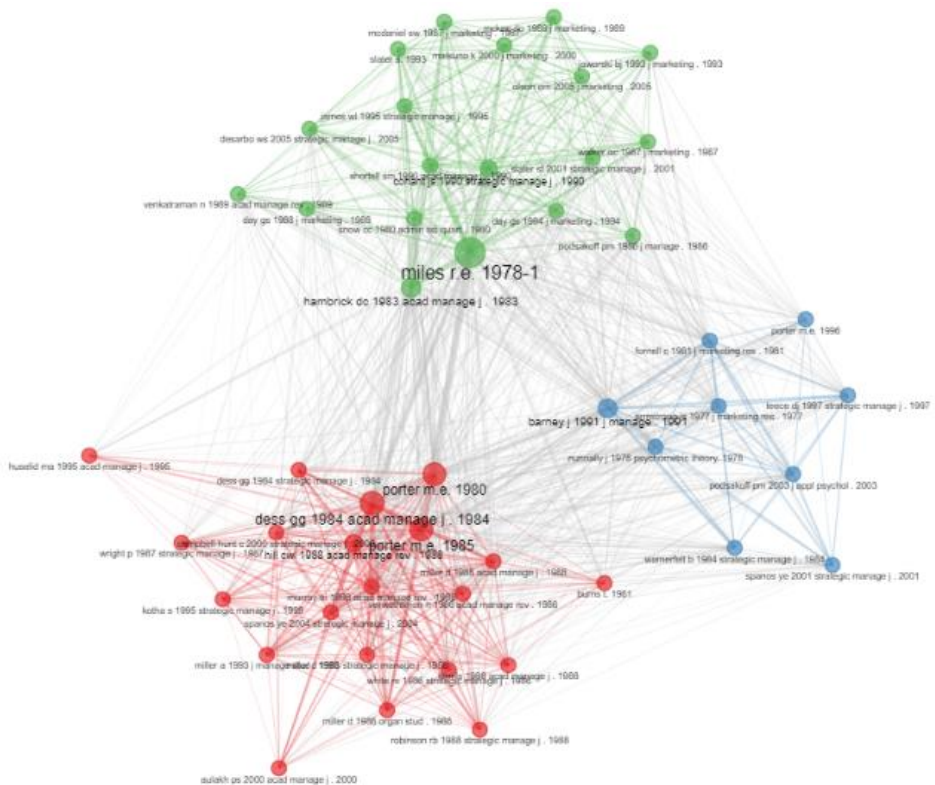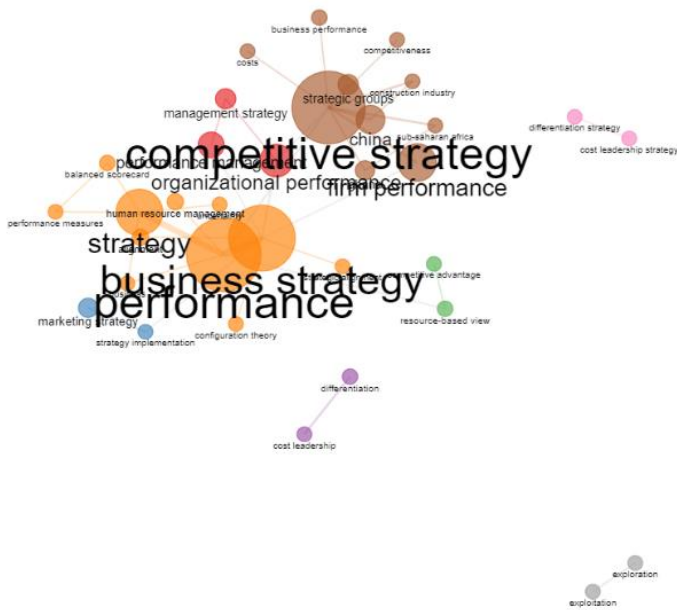

Note: Based on the field of papers.
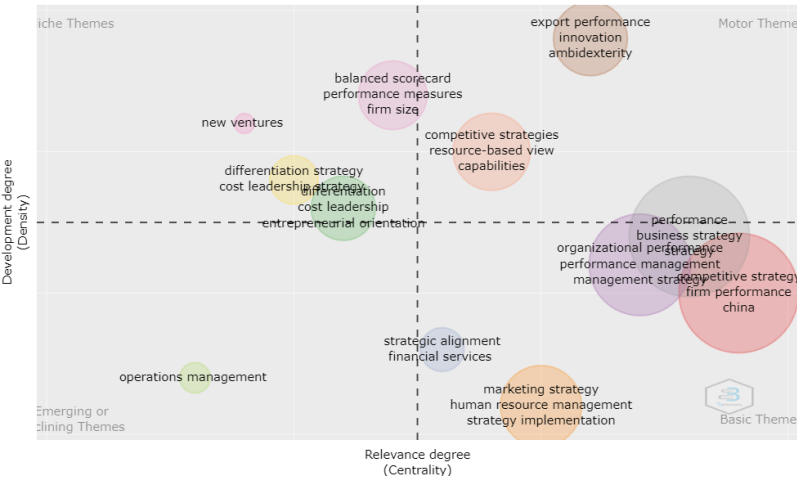
Source: Own elaboration

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Figure 14 | Co-occurrence network
(Main article content – authors' keywords within articles)

Source: Own elaboration

Figure 15 | Thematic map
(Centrality – the degree to which a topic is connected to other topics and density – the degree to which keywords in a given cluster are connected)
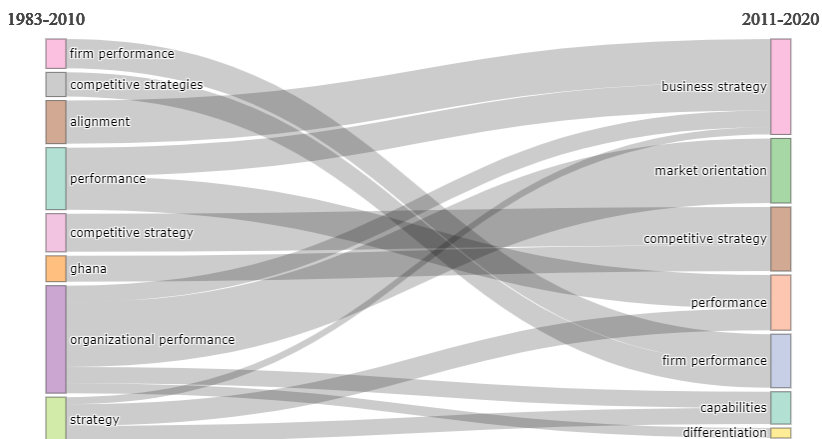

Source: Own elaboration

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Figure 16 | Thematic evolution
(Evolution of the field of authors' keywords in the selected period)

1983–2010   2011–2020

Source: Own elaboration

5   Article Content Analysis

We chose content analysis as a research tool for determining the presence of certain words and topics within the qualitative data, i.e., the text. The presence, meaning and relationships of the mentioned words and topics are quantified. The methodological approach and theoretical background of the articles are shown in Table 8. In the dataset of 157 articles, from the point of view of the methodological approach, the dominant majority (almost 90%) are empirical studies. In terms of theoretical background, the Porter typology (Porter, 1980, 1985) predominates, accounting for almost 58% of the sample. The typology according to Miles and Snow (1978) also has a significant position, with a share of almost 27%. An analysis of the theoretical background and methodological approach revealed that 83 empirical studies were published on Porter's typology. This is the most frequent empirical study within a theoretical background.

Table 8 | Methodological approach and theoretical background of articles

Main theoretical background	Case study	Empirical study	Conceptual framework	Literature review	Others	Theoretical background
Porter, 1980, 1985	1	83	3	0	4	**91**
Miles & Snow, 1978	1	38	1	1	1	**42**
Combination of Porter and Miles & Snow	0	10	0	0	1	**11**
Kim & Mauborgne, 2004	1	1	0	0	1	**3**
Combination of three or more schools	0	3	0	0	0	**3**
Other theories	0	6	1	0	0	**7**
Methodological approach	**3**	**141**	**5**	**1**	**7**	157

Source: Own elaboration

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Conclusion

The main purpose of this study was to explore the trends and research activities in performance articles in relation to business strategy. To achieve this objective, a bibliometric analysis was applied to find the authors' country of origin, the evolution of the focus of journals with respect to authors, citations and keywords, and reviewing the most cited and most recent influential research articles.

This review examined the state of the art of performance in relation to business strategy. There were 157 articles in the final dataset, an overview of articles indexed in the WoS and Scopus databases. A detailed audit of both WoS and Scopus databases showed that two articles are only in WoS and 50 articles only in the Scopus database, whereas 105 articles are included in both databases. The result indicates that the most influential journals are indexed in both WoS and Scopus databases. Our goal was to answer the following research questions:

1. What is the overall trend of interest in performance and what is the contribution of individual countries, major journals and authors?
2. What are the most relevant words for the performance articles from several perspectives and what types of research have been published in this area by the end of 2019?

The bibliometric analysis was used as a tool to achieve the goal. At the beginning, the evolution of articles in the period 1983-2019 was analysed. The key result is the curve continuing to grow, which represents a stable interest of authors in this topic. Another important result is the highly uneven distribution of articles in terms of country of origin and journal. Authors from the dataset of 157 publications represent 32 countries, of which 15 countries are represented by only one article. Among the most productive countries, the USA with 60 articles, which corresponds to 38% representation in the entire dataset, occupied the dominant position. The most relevant sources are the Journal of Business Research and Management Decision. These sources took first place with the same number of articles. With 13 articles and 7.83 fractionalised articles, J. A. Parnell is by far the most productive author. His professional activities mainly focus on strategic and crisis management. In this sample, these are mainly empirical studies focusing on the strategy-performance relationship.

The research area's most relevant words are shown here from four perspectives: Keywords Plus, authors' keywords, title words and abstract words. The most common keywords from the author's point of view are clearly "performance, competitive strategy and business strategy". This suggests a close link between business strategy and performance issues. Keywords Plus were ranked first by two performance collocations and again by a strategy term – "Miles". When examining the most influential resource references, then Miles & Snow and Porter, otherwise well-known business strategy typologists, are among the most cited sources. Based on the co-citation network of the papers, the important position of the three currents is evident: Miles (1978), Porter (1980, 1985) / Dess (1984), Barney (1991).

Two key typologies of business strategy, Porter and Miles & Snow, reappeared among the most globally cited documents. Performance measurement is by using various indicators

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according to the author. Olson et al. (2005) dealt with the company's performance depending on the marketing organization's structural characteristics and strategic behavioural emphases in relation to the implemented business strategy. Business strategy is represented here through the typology of Miles and Snow. Overall firm performance was evaluated based on three statements: met expectations (last year); last year exceeded that of our major competitors; satisfaction of the top management with the overall performance (last year). Spanos and Lioukas (2001) focused on research into the relative impact of industry specifics and corporate factors on sustainable competitive advantage. They referred to Porter's business strategy typology and resource-based view. Empirical evidence suggests that the specific effects of industry and firms are important, but they explained the different dimensions of performance. Two types of performance measures were used: market position (sales volume, growth in sales volume, market share, growth in market share) and profitability (profit margin, return on own capital, net profits). The main focus of Acquaah (2007) was the impact of social capital on the performance of the macro-organization and the question of how the relationship between social capital and the performance of the organization depends on the competitive strategic orientation of the organization. The strategic orientation here was based on the typology of business strategy according to Porter. Measures of performance used included a composite average perceptual measure of growth of sales and revenue, growth of net income or profits, growth in productivity, ROA and ROS.

We focused on an analysis of keywords that are evident from the methodological part, from which a surprising conclusion emerged. The authors of the most cited articles examined these objective indicators even though the practice in scientific-research journals may focus on subjective performance. Our assessment is that the articles combined objective methods with strategy, introducing a subjective factor into the research.

We also performed an article content analysis. In the dataset of 157 articles, from the point of view of the methodological approach, the dominant majority (almost 90%) took the position of an empirical study. In terms of the theoretical background, the Porter typology (Porter, 1980; 1985) predominated, accounting for almost 58% of the sample followed by Miles and Snow's (1978) typology with a share of almost 27%. The most significant conclusion that can be drawn from the above is that the dominance of Miles and Snow's (1978) and Porter's (1980, 1985) concepts in the field of business strategy persists and it is not influenced by any trends. The review also shows a strong bond between the business strategy and its economic logic, which is consistent with Hambrick and Fredrickson (2001).

Another important result is that the field of performance monitoring is not subject to trends either. We also found no trend in performance research in relation to business strategy. These results are somewhat surprising given the dynamic evolution of the economic environment and technology and suggest a potential for further research on whether these methods are indeed still relevant.

Based on the chosen keywords, the structure of the most cited articles in the presentation of objective indicators was revealed. Therefore, the next focus of the research could be to address subjective financial performance.

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Limitation

The credibility of the results is limited by potential bias in the selection of keywords and the subjective choice of the final dataset based on the article content analysis, even though the authors conducted the content analysis independently and resolved disputed items by consensus. "Using content analysis, researchers can quantify and analyse the presence, meanings and relationships of such certain words, themes, or concepts" (Columbia University, 2019). Quantification of individual concepts, frameworks and topics was performed, but a deeper analysis of individual relationships was not performed. We see this as a topic for future research.

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