

ARTICLES/ARTÍCULOS

Review of Business Location Research: a Bibliometric Analysis from 1968 to 2022

Revisión de la investigación sobre localización de empresas:
un análisis bibliométrico de 1968 a 2022

Virginia Perez-Benitez

University of Málaga, Spain
virginiaperez@uma.es

German Gemar

University of Málaga, Spain
ggemar@uma.es

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ABSTRACT

This research presents the results of a bibliometric analysis of academic research published on the topic of business location during the period from 1968 to 2022. Specifically, it seeks to identify, from a longitudinal perspective over time, the relationships between past and current topics, as well as to predict emerging trends in this field of research. The analysis has been conducted using SciMAT software, through which strategic diagrams and thematic networks based on the co-occurrence of keywords are obtained. A total of 509 documents from 1138 authors and 1799 keyword clusters have been processed. The results show that the main topics within the area of business location in the last five years are “Foreign direct investment”, “Perspective”, “Growth” and “Decisions”.

KEYWORDS: Business location; Globalization; Value-Chain; Multinational; Co-word analysis; Bibliometric analysis; SciMAT; Logitudinal analysis; Strategic diagram; Thematic network.

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RESUMEN

Esta investigación presenta los resultados de un análisis bibliométrico de investigaciones académicas publicadas sobre el tema de localización empresarial durante el período de 1968 a 2022. Específicamente, busca identificar, desde una perspectiva longitudinal en el tiempo, las relaciones entre temas pasados y actuales, así como predecir tendencias emergentes en este campo de investigación. El análisis se ha realizado mediante el software SciMAT, a través del cual se obtienen diagramas estratégicos y redes temáticas en función de la coocurrencia de palabras clave. Se procesaron un total de 509 documentos de 1138 autores y 1799 grupos de palabras clave. Los resultados muestran que los principales temas dentro del área de localización de negocios en los últimos cinco años son “Inversión Extranjera Directa”, “Perspectiva”, “Crecimiento” y “Decisiones”.

PALABRAS CLAVE: Ubicación de la empresa; Globalización; Cadena de valor; Multinacional; Análisis de copalabras; Análisis bibliométrico; SciMAT; Análisis longitudinal; Diagrama estratégico; Red temática.

1. Introduction

The location of firms has traditionally been an important research topic because of its implications both for the profitability and survival of firms and for the economic development of territories (Gemar, Soler, & Guzman-Parra, 2019). In particular, this area of research is especially important for managers and entrepreneurs, as location can make the difference between success and failure in a start-up company (Strotmann, 2007). Localisation can refer to the location of the different activities within the company's value chain as well as to different subsidiaries of the company located in different places or even countries, as in the case of multinational companies. In any case, it can be said that the decision on the physical location of the company is of a strategic nature (Chang & Li, 2019). This decision is influenced by a multitude of different factors, which in turn depend on the sector of activity and the size of the company in question (Mejia-Dorantes, Paez, & Vassallo, 2012). Due to the complexity, business location, and specifically its decision, has also been studied from a methodological point of view, proposing various techniques and mathematical tools (Arauzo-Carod, Liviano-Solis, & Manjón-Antolín, 2010). Moreover, in recent years, due to technological advances, even data analysis techniques based on Business Intelligence are now being used to assess the location of companies, for example, using data from social networks such as Facebook (Lin, et al., 2016).

Throughout history, many theories on the location of firms have been proposed, and there has been a clear evolution over time. One of the first authors to study location economies was Marshall (1890), who recognised economies of scale external to the company resulting from co-location. Later on, the postulates of Weber (1929) and the mechanistic models, which focus on the transport cost factor, stand out. Today there are more modern theories that consider multiple factors in the decision and take into account differences between sectors, countries, and types of companies (Arauzo-Carod, Liviano-Solis, & Manjón-Antolín, 2010; Alcacer & Chung, 2007; Devereux, Griffith, & Simpson, 2007). For example, the importance of innovation, knowledge sharing, networking, local infrastructure and economic conditions, quality of life

of employees and potential human capital have recently been considered (Akın & Seyfettinoğlu, 2022; Malecki, 1985; Arauzo-Carod, 2013; Lafuente, Vaillant, & Serarols, 2010; Jo & Lee, 2014). In a more novel way, authors such as Alcácer, Dezsó, & Zhao (2015) have studied how strategic interaction influences location choices over time. The importance of the location decision makes it possible to find studies in the academic literature that apply different econometric models to explain location decisions. In this line, Cissé, Dubé, & Brunelle (2020) evaluate the impact of local characteristics on the location decision of firms in different sectors using the multinomial logic model. Xu, Shen, Zhu, & Yu (2020) propose a neural network approach using satellite data and urban data to analyse the commercial popularity of the locations of various types of businesses.

Today we are facing a globalised economy. Against this backdrop, many companies are choosing to internationalize their business activity, becoming multinational companies. Within the internationalisation strategy, the concept of cultural distance becomes relevant (Hofstede, 1984). In the literature, we can find studies such as those by Lee, Pattnaik, & Gaur (2023) which analyse the role of transnational distance in the choice of location of Ibusiness companies.

On the other hand, as already mentioned, the location of companies is also studied from a macroeconomic point of view, as it is important for the economic development of regions. In fact, the economic progress of a territory is linked to its business fabric, with the most developed economies being those with the greatest number of companies. Thus, it can be concluded that the economic success of a region depends to a large extent on the entry decisions of companies (Piacentino, Bono, Cracolici, & Giuliani, 2017). In this sense, governments use subsidies to attract companies to disadvantaged regions in the hope that positive externalities will be generated (Devereux, Griffith, & Simpson, 2007).

The above highlights the importance of business location, which becomes a relevant issue both at the microeconomic level, when approached from the point of view of the company, and at the macroeconomic level, since it affects the economic development of regions. Given the extensive development and relevance that this area of research has within academic literature, it is necessary to carry out an in-depth longitudinal analysis over time since, as far as we know, there is no previous bibliometric analysis in this field.

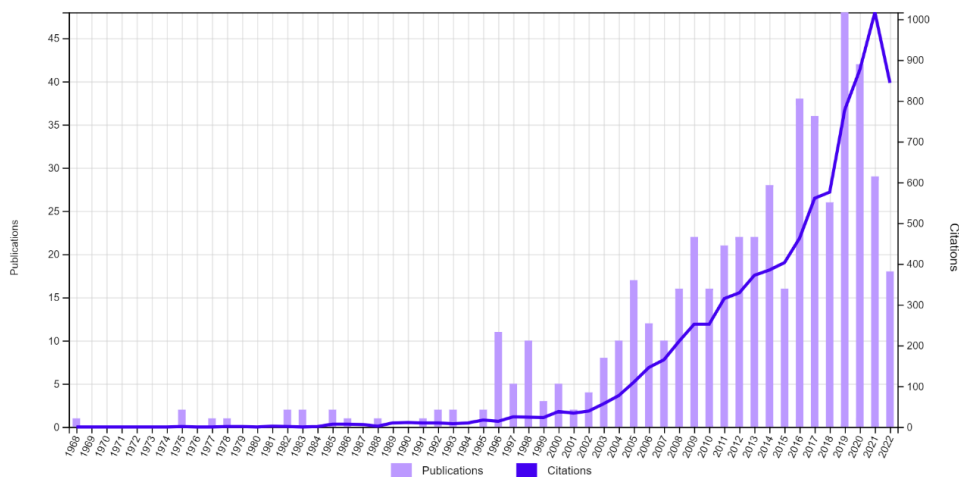
Therefore, the main objective of this paper is precisely to analyse the evolution of the business location research area over time to identify particular conceptual subdomains and to detect possible future trends. For this purpose, a bibliometric analysis of co-words has been carried out using SciMAT software for the time period from 1968 to 2022. We consider this research novel as we have not found previous longitudinal bibliometric analyses in this particular field of research. The following sections detail the dataset used in the study, as well as the methodology employed, the results and the main conclusions obtained.

2. Materials and methods

2.1. Database

For this study, data has been obtained from Web of Science (WoS) (Clarivate Web of Science (WoS), s.f.) which is a world leading database. It includes the Science Citation Index Expanded (SCIE), Social Science Citation (SSCI), Arts and Humanities Citation Index (AHCI), Emerging Sources Citation Index (ESCI), Conference Proceedings Citation Index (CPCI), Book Citation Index (BKCI), and Current Chemical Reactions and Index Chemicus. A search was conducted on 7 September 2022 with the following specific query: TS= (“business location”) OR TS= (“company location”) OR TS= (“firms location”). Where TS refers to the “Topic” which in turn includes the title, abstract and keywords. From this search we obtained 509 documents from 1138 authors and a total of 2019 unfiltered words for the period from 1968 to 2022, with 1968 being the first year in which a document published in WoS is recorded. Figure 1 shows the distribution of papers by year of publication.

Figure 1
Documents by year



Source: Web of Science (2022).

2.2. Methodology

To carry out the bibliometric analysis, the open source software SciMAT (Cobo, López-Herrera, Herrera-Viedma, & Herrera, 2012), was used to obtain scientific maps based on the co-occurrence of keywords. The total study time was divided into three periods: 1968–2012 (214 documents), 2013–2017 (140 documents) and 2018–2022 (155 documents). The reason for choosing this form of division was to make it possible to analyse a first period that is longer and more distant in time, and then the last decade, divided in turn into five-year periods in order to see a much more recent evolution of the subject, as well as, in a longitudinal co-word analysis, the first period studied is usually the longest in order to obtain a representative number of published documents (Muñoz-Leiva, Viedma-del-Jesús, Sánchez-Fernández, & López-Herrera, 2012). Table 1 shows the number of documents per period.

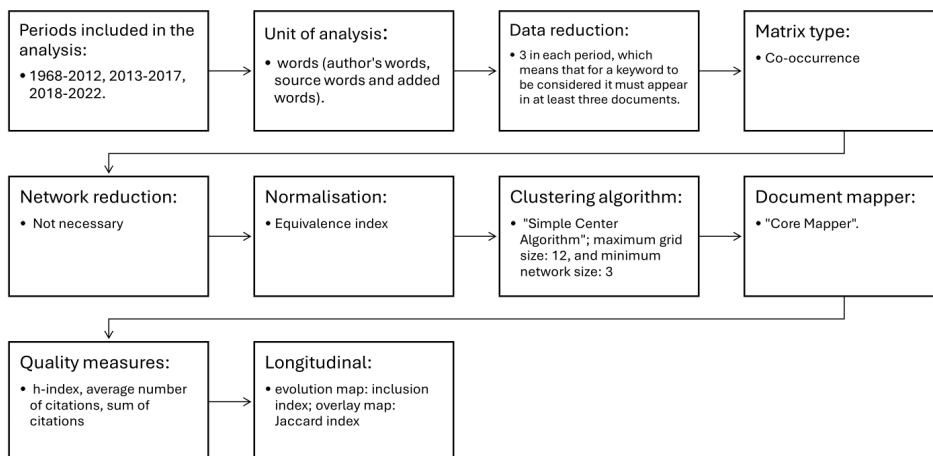
Table 1

Number of documents per period

Period	Number of documents
1968-2012	214
2013-2017	140
2018-2022	155
Total	509

Source: Own elaboration (2022).

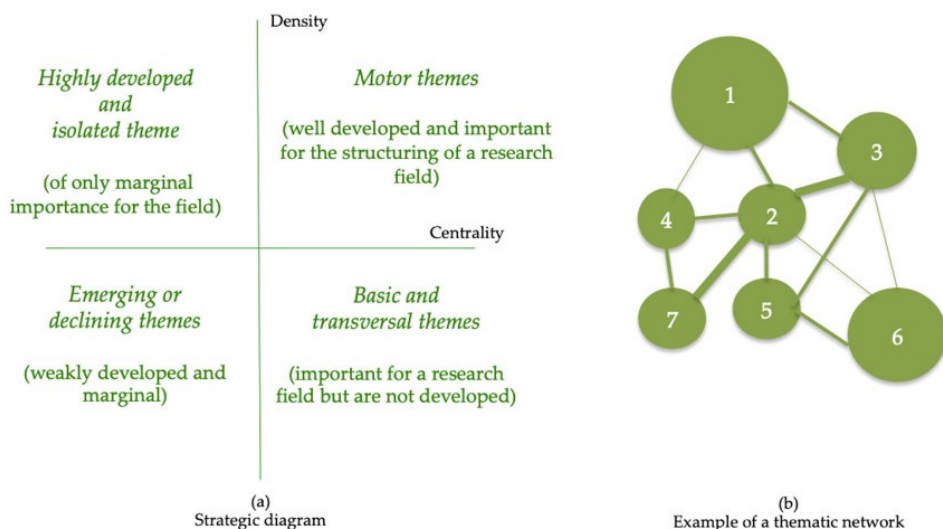
For the analysis of the co-words, a filtering process of the keywords was previously carried out so that (a) singular and plural forms, (b) words that are spelled differently according to American or British English style, (c) acronyms, (d) words with hyphens or inverted commas, and (e) synonyms, were merged into groups. Thus, out of a total of 2019 keywords, 1799 word groups were obtained. It is also relevant to note that the process of identifying keywords is done through the full text of the articles included in the corpus and not only in the title or abstract. The H-index (Hirsch, 2005), the total number of citations in each document and the average number of citations were used as measures of quality. The co-occurrence frequency, i.e. the number of documents in which two specific keywords appear together, is specifically analysed in the co-occurrence analysis. Concretely, the following steps were followed to carry out the analysis (Figure 2).

Figure 2*Steps followed for the analysis*

Source: Own elaboration.

SciMAT provides strategic diagrams, which allow the importance of each theme to be identified according to two measures: centrality and density (Callon, Courtial, & Laville, 1991). Centrality measures the degree of interaction of a network with other networks; it can be understood as a measure of the importance of a topic in the development of the whole research field under analysis and density measures the internal strength of the network or keywords describing the topic; it can be understood as a measure of the degree of development of the topic (Muñoz-Leiva, Sánchez-Fernández, Liébana-Cabanillas, & López-Herrera, 2012). Based on these measures, the strategy diagram is represented on a two-dimensional plane with the themes classified into four groups, one in each quadrant as shown in Figure 3.

Figure 3
Strategic Diagram and Thematic Network



Source: Gemar et al. (2021) adaptado de Cobo et al. (2012).

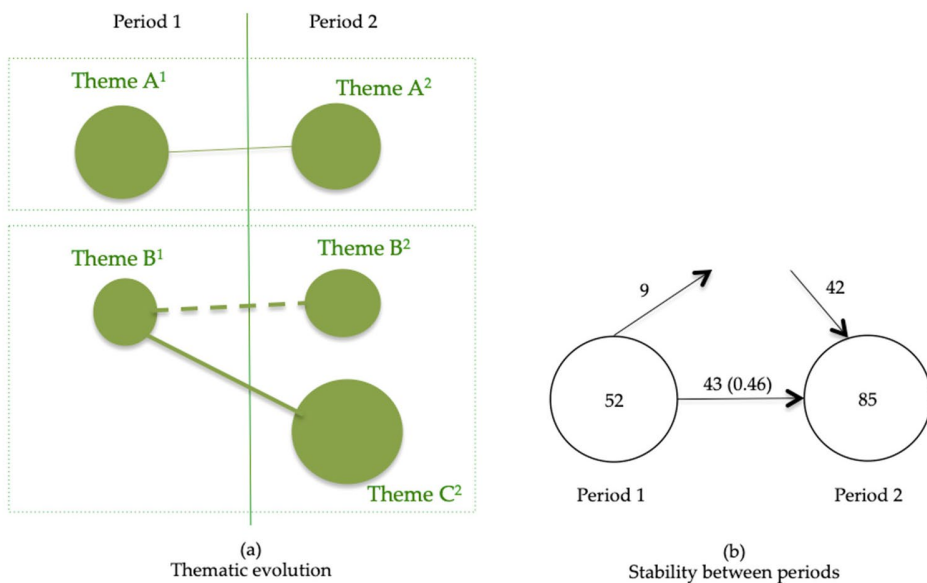
In the upper right quadrant are the motor themes, which are well developed and important for the subject area. The lower right quadrant contains the so-called basic and transversal themes, which are important but not well developed themes. The upper left quadrant corresponds to the highly developed and isolated topics of marginal importance. Finally, in the lower left quadrant are the emerging or declining themes within the subject area. Thematic networks are made up of keywords and their interconnections. The network is labelled with the name of the most central word. The volume of the spheres is proportional to the number of documents for each keyword, and the thickness of the links between two spheres is proportional to the equivalence index. A document is linked to a topic if it contains at least two keywords present in the topic network (Muñoz-Leiva, Porcu, & Barrio-García, 2015; Gemar, Soler, & Sánchez-Teba, 2021).

The results of the temporal or longitudinal analysis are shown using an evolution map and an overlapping elements graph. The evolution map (Figure 4a) shows the thematic areas or clusters for each period and the links between them. Solid lines mean that the linked clusters share the main element, while dashed lines mean that the clusters share other elements, but not the main element. The thickness of the line is proportional to the inclusion rate and the volume of the spheres to the number of published documents associated with each cluster. The graph of overlapping elements (Figure 4b) shows the stability between consecutive periods. The circles represent the periods with the number of keywords in each period. The horizontal arrows show the shared words in both periods, the stability index is shown in

brackets. The input arrow represents the number of new words entering the period, while the output arrow represents the words that are no longer in the current period but were in the previous one.

Figure 4

Examples of thematic evolution (a) Thematic evolution (b) Inter-period stability



Source: Gemar et al. (2021) adapted from Cobo et al. (2012).

3. Results and discussion

3.1. Main authors and sources

In the development of this research, a total of 509 documents from 1138 authors obtained from the main collection of Web of Science were analysed. Table 2 shows the journals with more than 4 documents collected in this study.

Table 2

Journals by number of papers

Source	Number of documents
Regional Science and Urban Economics	11
Journal of Urban Economics	10
Economic Development Quarterly	8
Growth and Change	8
Journal of Regional Science	8
Papers in Regional Science	8
Annals of regional Science	7
Sustainability	7
European Planning Studies	5
Small Business Economics	5
Tijdschrift Voor Economische en Sociale Geografie	5
Urban Studies	5

Source: Own elaboration (2022).

The main titles ordered by number of citations, as well as the year of publication, average number of citations per year and source are shown in table 3.

Table 3

Most cited documents

Title	Year	Sum citations	Average citation	Source
Deconstructing clusters: chaotic concept or policy panacea? (Martin & Sunley, 2003)	2003	1227	61.35	Journal of Economic Geography
Pollution haven hypothesis and environmental impacts of foreign direct investment: The case of industrial emission of sulfur dioxide (SO ₂) in Chinese provinces (He, 2006)	2006	414	24.35	Ecological Economics
Location strategies and knowledge spillovers (Alcacer & Chung, 2007)	2007	404	25.25	Management Science
Business location decisions in the united-states - estimates of the effects of unionization, taxes, and other characteristics of states (Bartik, 1985)	1985	330	6.68	Journal of Business & Economic Statistics
Empirical studies in industrial location: an assessment of their methods and results (Arauzo-Carod, Liviano-Solis, & Manjón-Antolin, 2010)	2010	176	13.54	Journal of Regional Science
Firm location decisions, regional grants and agglomeration externalities (Devereux, Griffith, & Simpson, 2007)	2007	173	10.81	Journal of Public Economics
Westward movement of new polluting firms in China: Pollution reduction mandates and location choice (Wu, Guo, Bing, & Bu, 2017)	2017	126	21	Journal of Comparative Economics
The Economic Geography of Offshoring: The Fit between Activities and Local Context (Jensen & Pedersen, 2011)	2011	115	9.58	Journal of Management Studies
The effects of environmental-regulation on business location in the united-states (Bartik, 1988)	1988	107	3.06	Growth and Change

Title	Year	Sum citations	Average citation	Source
Environmental regulation and French firms location abroad: An economic geography model in an international comparative study (Kheder & Zugravu, 2012)	2012	95	8.64	Ecological Economics
Who Benefits from State Corporate Tax Cuts? A Local Labor Markets Approach with Heterogeneous Firms (Suárez Serrato & Zidar, 2016)	2016	92	13.14	American Economic Review
Saving the states from themselves: Commerce clause constraints on state tax incentives for business (Enrich, 1996)	1996	91	3.37	Harvard Law Review
The role of economic and quality of life values in rural business location (Johnson & Rasker, 1995)	1995	85	3.04	Journal of Rural Studies
Ownership of intellectual property and corporate taxation (Griffith, Miller, & O'Connell, 2014)	2014	84	9.33	Journal of Public Economics
Modelling the performance of Australian hotels: a DEA double bootstrap approach (Assaf & Agbola, 2011)	2011	80	6.67	Tourism Economics
Tradeoffs between local taxes and government spending as determinants of business location (Gabe & Bell, 2004)	2004	80	4.21	Journal of Regional Science
The effects of tax increment financing on economic development (Dye & Merriman, 2000)	2000	79	3.43	Journal of Urban Economics
Host country characteristics and agglomeration in foreign direct investment (Braunerhjelm & Svensson, 1996)	1996	68	2.52	Applied Economics
Transportation infrastructure impacts on firm location: the effect of a new metro line in the suburbs of Madrid (Mejía-Dorantes, Paez, & Vassallo, 2012)	2012	67	6.09	Journal of Transport Geography
Logistics service providers and corporate social responsibility sustainability reporting in the logistics industry (Pieczyk & Björklund, 2015)	2015	66	8.25	International Journal of Physical Distribution & Logistics Management

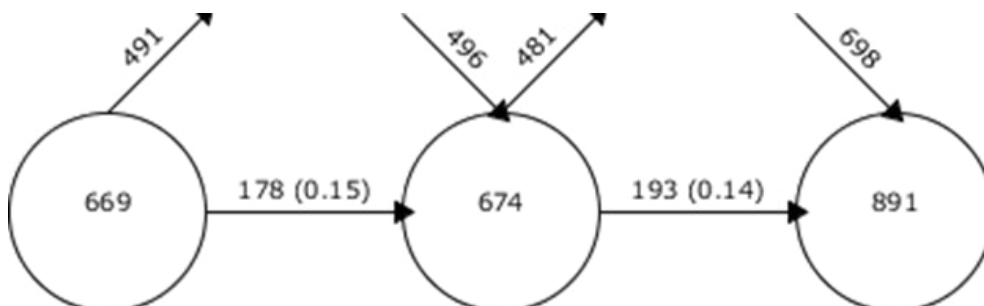
Source: Own elaboration based on WoS (2022).

3.2. Longitudinal Map

In order to analyse the evolution of the research area “business location” over time, it is useful to make a longitudinal map. In this study the total time has been divided into three periods: 1968–2012, 2013–2017 and 2018–2022. Figure 5 shows the number of keywords of interest in these years and also shows the stability between periods. We observe that in the first period there were 669 keywords. In the second period there were 674 keywords of which 178 came from the previous period, while 491 words did not continue. In the third period, of the 891 words, 193 remained from the second period, while 481 did not continue, and 698 new words were added in this period. The stability index between the first two periods is 0.15 and between the second and third period it is 0.14. This low stability between periods suggests that the research area of business location is very changeable and also cross-cutting, drawing interest from multiple fields and sectors and can be studied from different perspectives, as evidenced by the number of different words of interest that come and go over the years.

Figure 5

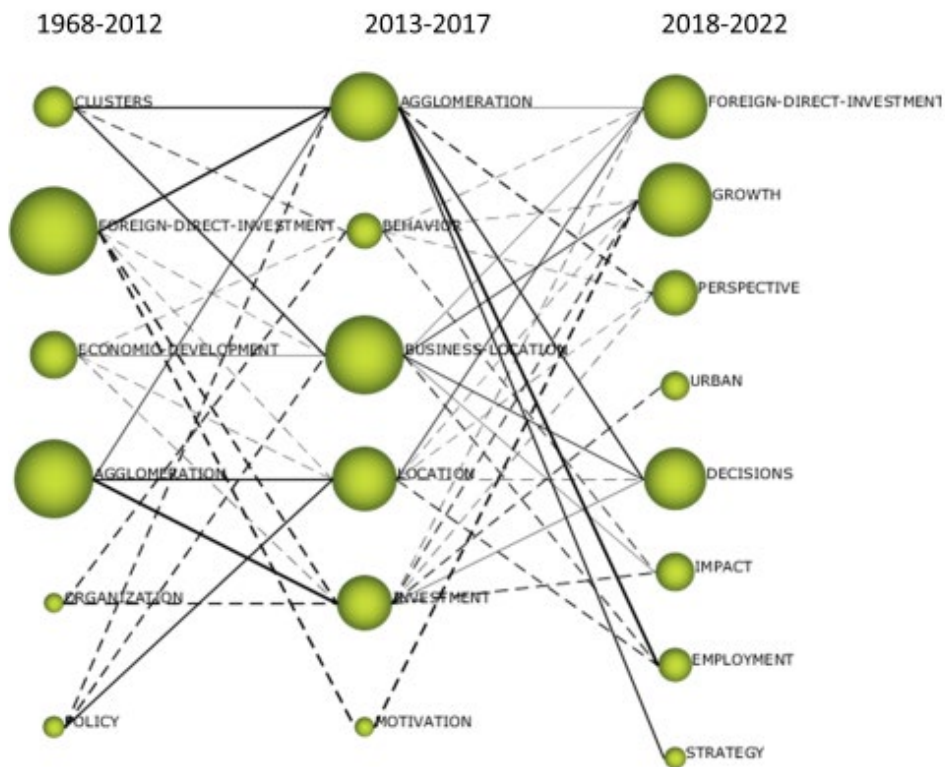
Stability between periods. Overlapping graph of keywords from 1968 to 2022



Source: Own elaboration based on SciMAT (2022).

Figure 6 shows the map of thematic evolution by period according to the number of documents. In the first period, 1968–2012, the topics of most interest in the field of business location (with more documents published) were “Foreign-Direct-Investment” and “Agglomeration”. In the second period, 2013–2017, the theme “Agglomeration” maintains its importance, with strong links to the theme “Foreign Direct Investment” from the previous period. It can be seen that the theme “Foreign Direct Investment” does not appear as such in the second period. In addition, “Business Location” appears as a new important theme in this period, linked to the “Cluster” and “Economic-Development” themes of the previous period. Regarding the third period, 2018–2022, the main themes were “Growth”, “Foreign Direct Investment” and “Decisions”. We note that the theme “Foreign Direct Investment” reappears as an important theme, while the theme “Agglomeration” disappears in this period. The new themes “Growth” and “Decisions” appear strongly. The theme “Growth” has links with “Business Location” from the previous period, while “Decisions” shares important elements with the themes “Agglomeration”, “Business Location” and “Investment”. After observing this thematic evolution, it can be concluded that the research area of business location is very dynamic and broad, and the only themes that remain important in at least two periods are “Agglomeration” and “Foreign Direct Investment”.

Figure 6
Thematic evolution map by number of documents



Source: Own elaboration based on SciMAT (2022).

3.3. Strategic maps and Thematic networks

In this section the most important themes in the research area in each of the periods are analysed. Table 4 shows the properties of the themes, also called clusters, in each period, indicating for each cluster, the number of papers in which they are found as keywords, the h-index and the sum of citations. In the period 1968-2012 there are 6 clusters, in the second period 2013-2017 another 6 clusters and in the last period 2018-2022 there are 8 clusters or themes. In table 4 the clusters are ordered by number of documents.

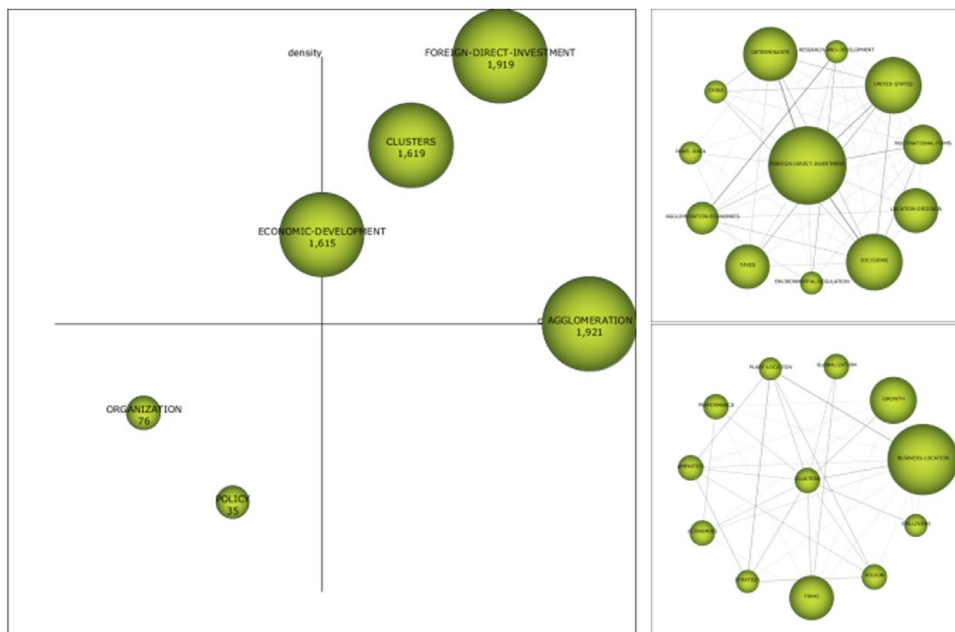
Table 4
Cluster properties

Period	Cluster	Number documents	h-index	Sum citations
1968-2012	Foreign-Direct-Investment	31	19	1919
	Agglomeration	27	14	1921
	Economic-Development	14	10	1615
	Clusters	11	8	1619
	Policy	3	2	35
	Organization	2	2	76
2013-2017	Business-location	27	10	404
	Agglomeration	23	11	460
	Location	21	8	353
	Investment	17	13	545
	Behavior	9	3	55
	Motivation	2	1	1
2018-2022	Growth	25	8	154
	Foreign-Direct-Investment	21	5	74
	Decisions	20	5	95
	Perspective	13	5	133
	Impact	10	4	56
	Employment	8	5	45
	Urban	6	4	46
	Strategy	3	1	5

Source: Own elaboration based on SciMAT (2022).

3.3.1. Period 1968-2012

Figure 7 shows the strategic diagram on the left and the thematic networks corresponding to the main themes of the period are shown on the right. In the strategic diagram the size of the spheres is proportional to the sum of citations for the theme in question. It can be seen that the driving themes of this period are “Foreign Direct Investment” and “Clusters”. The theme “Agglomeration” seems to be a basic theme in this period, but is close to becoming a driving theme. The theme “Economic Development” is well developed with a high density, but of marginal importance as it lacks the centrality to be considered a driving theme. The themes “Organization” and “Policy” are underdeveloped themes in this period and can be considered emerging or declining. In the thematic network corresponding to the theme “Foreign Direct Investment” we find the following related keywords: “Decisions”, “United States”, “Determinants”, “Location-Decision”, “Taxes”, “Multinational-Firms”, “Agglomeration-Economies”, “Panel-Data”, “China” and “Research-And-Development”. The most important of these are “Decisions”, “United States” and “Determinants”. For the network theme “Clusters” the most important words are “Business Location”, “Growth” and “Firms”. It is important to note that both the themes “Business Location” and “Growth” will become driving themes of the research field in the following periods.

Figure 7*Strategic diagram and main thematic networks, 1968-2012 period*

Source: Own elaboration based on SciMAT (2022).

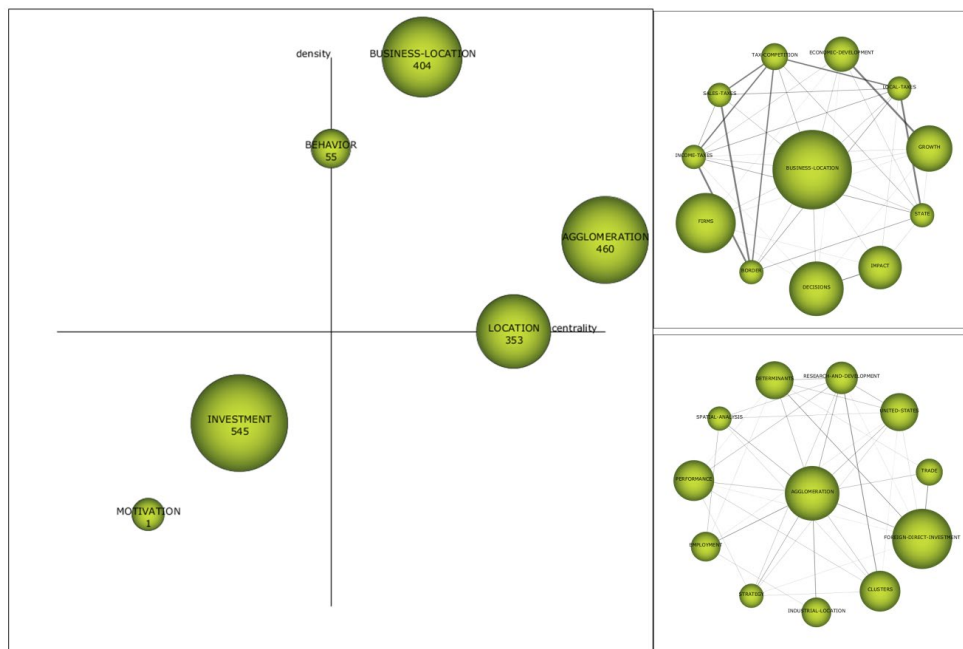
3.3.2. Period 2013-2017

Figure 8 shows on the left the strategic diagram with the main themes of the period and on the right the thematic networks of the most important motor themes. In this period it can be seen that the motor themes are “Business Location” and “Agglomeration”. The evolution of the theme “Agglomeration” is noteworthy, as it has become consolidated as a motor theme in this period by increasing its density over time. With regard to the theme “Business Location”, we can also observe its growth over time, going from being an important key word within the theme “Clusters” in the previous period, to a motor theme in this second period. The theme “Behaviour” presents a high density, but still lacks the centrality to be considered a motor theme, so it may be a well-developed theme, but of minor importance in the field of business location, in this period. Similarly, the theme “Location” has a high centrality, so it is considered important in this research area, but it is not yet a motor theme as it lacks development. The themes “Investment” and “Motivation” can be considered emerging or declining due to their low density and centrality. In terms of the thematic networks, the most significant topics in the “Business Location” theme are “Firms”, “Decisions” and “Growth”. In the “Agglomeration” thematic network, the most

important words are “Foreign Direct Investment”, “Clusters” and “Performance”. We observe that both “Foreign Direct Investment” and “Clusters” were considered motor themes in the previous period, so that they have lost relevance in this period, being displaced or absorbed by the “Agglomeration” theme.

Figure 8

Strategic diagram and main thematic networks, 2013-2017 period



Source: Own elaboration based on SciMAT (2022).

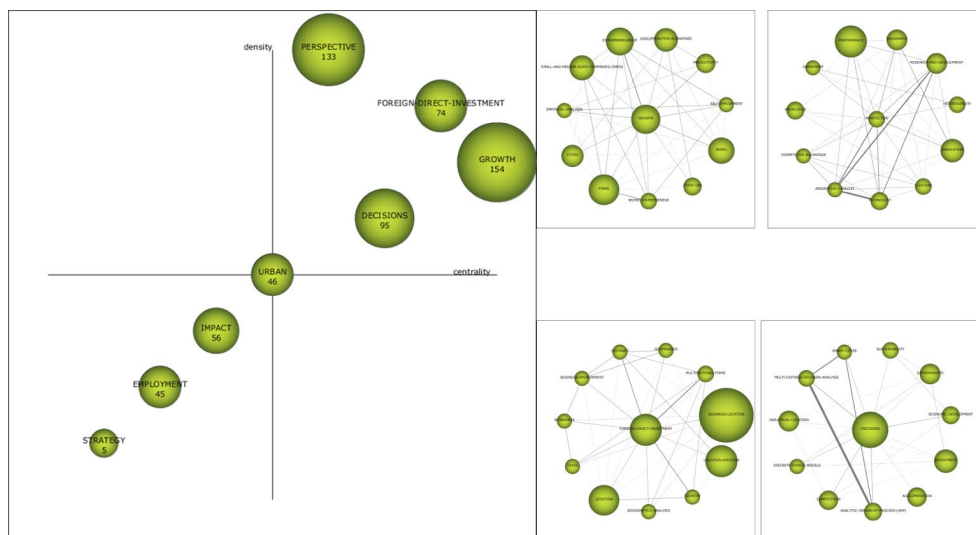
3.3.3. Period 2018-2022

Figure 9 shows on the left the strategic diagram with the most important themes of the period and on the right the thematic networks of all the motor themes of the period. In this period the motor themes are “Perspective”, “Foreign Direct Investment”, “Growth” and “Decisions”. It is striking that both “Growth” and “Decisions” were key concepts within the “Business Location” motor themes of the previous period, which have evolved over time to be considered motor themes in the current period. The theme “Foreign Direct Investment” reappears as a motor theme. The theme “Urban” is right in the middle of the diagram with a centrality and density right in the middle ground, so it cannot be classified in any of the clusters. Finally, the themes “Impact”, “Employment” and “Strategy” are classified as emerging or

declining themes, as they have a low centrality and density. In the “Perspective” thematic network, the keywords “Performance”, “Innovation”, “Geography” and “Research-And Development” stand out, the latter being strongly linked to “Absorptive Capacity” and “Technology”. With regard to the network corresponding to the theme “Foreign Direct Investment”, we highlight “Business Location” as the most important word, recalling that “Business Location” was a motor theme in the previous period. Within the thematic network “Growth” we highlight “Firms”, “Entrepreneurship”, “Model”, and “Small and Medium Size Companies” among others, of which the one with the strongest link to “Growth” is “Entrepreneurship”. Finally, the thematic network corresponding to “Decisions” is formed by the words: “Investment”, “Industrial Location”, “Determinants”, “Agglomeration”, “Competition”, “Analytic Hierarchy Process”, “Economic Development”, “Multicriteria-Decisions-Analysis”, “Sustainability”, “Discret-Model-Choice” and “Smart Cities”. The strong link between the words “Multicriteria-Decisions-Analysis”, “Analytic Hierarchy Process” and “Smart Cities” is significant.

Figure 9

Strategic diagram and main thematic networks, 2018-2022 period



Source: Own elaboration based on ScimAT (2022).

4. Conclusions

This paper conducts a bibliometric keyword analysis on the topic of business location from 1968 to 2022. Business location is an area of research with a long historical tradition that has been widely developed over the years. In particular, this topic is of great importance in the field of strategic management and also in the political sphere. Today we find ourselves in a context of economic globalisation, in which the internationalisation of companies has become a strategic factor that has an impact on the probability of success. Within the internationalisation strategy, decisions on the location of activities in the value chain, branches or company headquarters are of the utmost importance and involve the careful analysis of a multitude of factors.

The bibliometric analysis shows that within this research area a multitude of themes with different conceptual sub-domains are developed, which can be interpreted at both business and policy level. The high number of incoming and outgoing keywords in the periods shows the cross-cutting nature of this research area.

The methodology used in this paper is very useful because it allows us to analyse from a longitudinal perspective over time how concepts evolve and, by focusing on a specific period, it allows us to detect which are the important motor themes within the research area of business location. It also allows us to identify marginal, emerging or declining issues within this research area.

In principle, through longitudinal analysis, there does not seem to be much cohesion between the themes that are considered important between the three periods into which we have divided the analysis, with only the themes “Agglomeration” and “Foreign Direct Investment” being maintained in at least two periods. However, a more in-depth co-word analysis, using strategy diagrams and thematic networks, reveals strong links between the motor themes and keywords that show the thematic evolution more clearly. The high number of incoming and outgoing keywords in the periods shows the cross-cutting nature of this research area, as it is an important topic of interest both at the business level, as shown by clusters such as “Decisions” or “Business Location”, and at the political level as it is linked to the economic development of regions, as shown by the clusters “Economic Development”, “Growth” or “Foreign Direct Investment”. The study of location according to different levels and points of view implies a great richness and diversity of keywords.

With respect to the business level, we highlight how the theme of “Agglomeration” shows great importance and is maintained over time, which could refer to the so-called economies of agglomeration, which are a traditional location factor and represent the benefits obtained by companies by locating close to other companies in their sector or to urbanised centres. Another important theme that has been maintained over time is that of “Foreign Direct Investment”, which we associate with the aforementioned growing globalisation that leads to the need for companies to internationalise, with the consequent investments that this strategy entails. Also, from a business management point of view, the “Decisions” cluster stands out,

highlighting the importance of location as a strategic decision, as well as the use of certain mathematical techniques as methodological tools to support these decisions, such as multi-criteria analysis, discrete choice models or hierarchical analytical processes.

At the policy level, the importance of this area of research is also shown through topics and keywords such as Growth, Entrepreneurship, Cities, or Startups, among others. In this sense, it could be argued that the location of companies is related to the economic development of regions and cities, showing links between the existing business fabric in cities and their economic growth. In this way, it is crucial for politicians to attract investment and encourage entrepreneurship and the creation of new companies in their territories, as this is directly linked to the economic growth of the regions.

4.1. Theoretical implications

From a theoretical point of view, this paper represents an important contribution to research on firm location, organising the knowledge generated in this field to date and identifying the main motor themes on which research is currently focused, as well as future trends in this area.

The topic addressed is of interest from a strategic management point of view. A bibliometric analysis of the academic research published on the topic of business location during the period from 1968 to 2022 is carried out. The period of analysis is broad, providing a view of the subject that encompasses different economic, social and business moments. This study makes it possible to analyse from different perspectives how the topic of business location has been treated or related. The study includes 509 documents from 1138 authors and 1799 keyword groups. It should be noted that no longitudinal bibliometric analysis has been carried out in this area to date.

A review of the main titles and most cited authors, as well as the main journals with the most published papers in this research area, is also carried out.

Furthermore, at the level of methodology, the study presents SciMAT as an ideal tool for longitudinal bibliometric analysis.

4.2. Practical implications

On a practical level, the conclusions drawn from this analysis are of interest to policy makers and managers alike, since for both the location of companies is a decisive issue with important consequences for the economic growth of regions and for the internal profitability of the company.

From the perspective of strategic management, following the bibliometric analysis, it is shown that the location of both value chain activities and new company headquarters is of a strategic nature. To make this type of decision, managers appear to be relying on specific analytical tools such as discrete choice models or multi-

criteria analysis models. The company's internationalisation strategy involves direct investments abroad; these strategies are common, especially in multinational firms, and must consider the taxes of each country.

At the macroeconomic level, it is crucial for policy makers to attract investment and encourage entrepreneurship and the creation of new businesses in their territories. These policies can have positive impacts on employment and productivity and are, therefore, directly linked to economic growth in regions and cities.

5. Limitations and future lines of research

The main limitations of the study are, firstly, that although the SciMAT software is considered to be ideal for this type of analysis, some of its processes, such as the filtering of keywords, have to be carried out manually, which may introduce possible biases in the results.

Another limitation stems from the data search process carried out, since the search results depend directly on the criteria or question asked, which could lead to the omission of a word or criterion, thus affecting the number of documents obtained that constitute the corpus of data to be analysed.

With regard to future lines of research, this analysis could be carried out using other databases instead of Web of Science, such as Scopus, or a combination of both, and the results obtained could be compared. The co-word analysis could also be extended with a co-citation analysis or an author analysis, thus taking advantage of all the functionalities of SciMAT. The analysis could also be repeated using other bibliometric software, such as VOSviewer, which would allow the results obtained to be compared and complemented.

As we have shown, business location is a very broad area that can be approached from multiple perspectives. Therefore, bibliometric studies could also be carried out on some of the topics or clusters linked to business location, such as location decisions or investments abroad, which would allow us to delve deeper and provide more specificity.

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References

- Akın, B., & Seyfettinoğlu, Ü. (2022). Factors determining the location decision: Analysis of location choice preferences of the ICI-1000 companies with the nested logit model. *Central Bank Review*, 22(1), 57-75. <https://doi.org/10.1016/j.cbrev.2022.03.001>
- Alcácer, J., & Chung, W. (2007). Location strategies and knowledge spillovers. *Management science*, 53(5), 760-776. <https://doi.org/10.1287/mnsc.1060.0637>
- Alcácer, J., Dezsó, C., & Zhao, M. (2015). Location choices under strategic interactions. *Strategic Management Journal*, 36(2), 197-215. <https://doi.org/10.1002/smj.2214>
- Arauzo-Carod, J., Liviano-Solis, D., & Manjón-Antolín, M. (2010). Empirical studies in industrial location: An assessment of their methods and results. *Journal of Regional Science*, 50(3), 685-711. <https://doi.org/10.1111/j.1467-9787.2009.00625.x>
- Arauzo-Carod, J.-M. (2013). Location determinants of new firms: does skill level of human capital really matter? *Growth and Change*, 44(1), 118-148. <https://doi.org/10.1111/grow.12004>
- Assaf, A., & Agbola, F. (2011). Modelling the performance of Australian hotels: a DEA double bootstrap approach. *Tourism economics*, 17(1), 73-89. <https://doi.org/10.5367/te.2011.0027>
- Bartik, T. J. (1985). Business location decisions in the United States: Estimates of the effects of unionization, taxes, and other characteristics of states. *Journal of Business & Economic Statistics*, 3(1), 14-22. <https://doi.org/10.1080/07350015.1985.10509422>
- Bartik, T. J. (1988). The effects of environmental regulation on business location in the United States. *Growth and Change*, 19(3), 22-44. <https://doi.org/10.1111/j.1468-2257.1988.tb00473.x>
- Braunerhjelm, P., & Svensson, R. (1996). Host country characteristics and agglomeration in foreign direct investment. *Applied Economics*, 28(7), 833-840. <https://doi.org/10.1080/000368496328272>
- Callon, M., Courtial, J., & Laville, F. (1991). Co-word analysis as a tool for describing the network of interactions between basic and technological research: The case of polymer chemistry. *Scientometrics*, 22(1), 155-205. <https://doi.org/10.1007/BF02019280>
- Chang, X., & Li, J. (2019). Business performance prediction in location-based social commerce. *Expert Systems with Applications*, 126, 112-123. <https://doi.org/10.1016/j.eswa.2019.01.086>
- Cissé, I., Dubé, J., & Brunelle, C. (2020). New business location: how local characteristics influence individual location decision? *The Annals of Regional Science*, 64(1), 185-214. <https://doi.org/10.1007/s00168-019-00968-1>
- Clarivate Web of Science (WoS). (s.f.). Obtenido de <https://webofscience.com/wos>

- Cobo, M., López-Herrera, A., Herrera-Viedma, E., & Herrera, F. (2012). SciMAT: A New Science Mapping Analysis Software Tool. *Journal of the American Society for Information Science and Technology*, 63(8), 1609–1630. <https://doi.org/10.1002/asi.22688>
- Devereux, M., Griffith, R., & Simpson, H. (2007). Firm location decisions, regional grants and agglomeration externalities. *Journal of Public Economics*, 91(3-4), 413–435. <https://doi.org/10.1016/j.jpubeco.2006.12.002>
- Dye, R., & Merriman, D. (2000). The effects of tax increment financing on economic development. *Journal of urban Economics*, 47(2), 306–328. <https://doi.org/10.1006/juec.1999.2149>
- Enrich, P. D. (1996). Saving the states from themselves: Commerce clause constraints on state tax incentives for business. *Harvard Law Review*, 377–468. <https://doi.org/10.2307/1342149>
- Gabe, T., & Bell, K. (2004). Tradeoffs between local taxes and government spending as determinants of business location. *Journal of Regional Science*, 44(1), 21–41. <https://doi.org/10.1111/j.1085-9489.2004.00326.x>
- Gemar, G., Moniche, L., & Morales, A. (2016). Survival analysis of the Spanish hotel industry. *Tourism Management*, 54, 428–438. <https://doi.org/10.1016/j.tourman.2015.12.012>
- Gemar, G., Soler, I. P., & Guzman-Parra, V. F. (2019). Predicting bankruptcy in resort hotels: a survival analysis. *International Journal of Contemporary Hospitality Management*, 31(4), 1546–1566. <https://doi.org/10.1108/IJCHM-10-2017-0640>
- Gemar, G., Soler, I., & Sánchez-Teba, E. (2021). Waste Management: Valorisation Is the Way. *Foods*, 10(10), 2373. <https://doi.org/10.3390/foods10102373>
- Griffith, R., Miller, H., & O'Connell, M. (2014). Ownership of intellectual property and corporate taxation. *Journal of Public Economics*, 112, 12–23. <https://doi.org/10.1016/j.jpubeco.2014.01.009>
- He, J. (2006). Pollution haven hypothesis and environmental impacts of foreign direct investment: The case of industrial emission of sulfur dioxide (SO₂) in Chinese provinces. *Ecological economics*, 60(1), 228–245. <https://doi.org/10.1016/j.ecolecon.2005.12.008>
- Hirsch, J. (2005). An index to quantify an individual's scientific research output. *Proceedings of the National Academy of Sciences of the United States of America*, 16569–16572. <https://doi.org/10.1073/pnas.0507655102>
- Hofstede, G. (1984). *Culture's consequences: International differences in work-related values* (vol. 5). London: Sage Publications.
- Jensen, P., & Pedersen, T. (2011). The economic geography of offshoring: the fit between activities and local context. *Journal of Management Studies*, 48(2), 352–372. <https://doi.org/10.1111/j.1467-6486.2010.00967.x>

- Jo, Y., & Lee, C.-Y. (2014). Technological capability, agglomeration economies and firm location choice. *Regional Studies*, 48(8), 1337-1352. <https://doi.org/10.1080/00343404.2012.711946>
- Johnson, J., & Rasker, R. (1995). The role of economic and quality of life values in rural business location. *Journal of Rural Studies*, 11(4), 405-416. [https://doi.org/10.1016/0743-0167\(95\)00029-1](https://doi.org/10.1016/0743-0167(95)00029-1)
- Kheder, S. B., & Zugravu, N. (2012). Environmental regulation and French firms location abroad: An economic geography model in an international comparative study. *Ecological Economics*, 77, 48-61. <https://doi.org/10.1016/j.ecolecon.2011.10.005>
- Lafuente, E., Vaillant, Y., & Serarols, C. (2010). Lafuente, E., Vaillant, Y., & Serarols, C. (2010). Location decisions of knowledge-based entrepreneurs: why some Catalan KISAs choose to be rural? *Technovation*, 30(11-12), 590-600. <https://doi.org/10.1016/j.technovation.2010.07.004>
- Lee, H., Pattnaik, C., & Gaur, A. (2023). Internationalization of I-business Firms: The role of distance on location choice. *Journal of Business Research*, 164, 114010. <https://doi.org/10.1016/j.jbusres.2023.114010>
- Lin, J., Oentaryo, R., Lim, E.-P., Vu, C., Vu, A., & Kwee, A. (2016). Where is the Goldmine?: Finding Promising Business Locations through Facebook Data Analytics. *Proceedings of the 27th Acm Conference on Hypertext and Social Media (HT'16)*, (pp. 93-102). <https://doi.org/10.1145/2914586.2914588>
- Malecki, E. (1985). Industrial location and corporate organization in high technology industries. *Economic Geography*, 61(4), 345-369. <https://doi.org/10.2307/144054>
- Marshall, A. (1890). *Principles of economics*. London: MacMillan.
- Martin, R., & Sunley, P. (2003). Deconstructing clusters: chaotic concept or policy panacea? *Journal of economic geography*, 3(1), 5-35. <https://doi.org/10.1093/jeg/3.1.5>
- Mejia-Dorantes, L., Paez, A., & Vassallo, J. M. (2012). Transportation infrastructure impacts on firm location: the effect of a new. *Journal of Transport Geography*, 22, 236-250. <https://doi.org/10.1016/j.jtrangeo.2011.09.006>
- Muñoz-Leiva, F., Porcu, L., & Barrio-García, S. (2015). Discovering prominent themes in integrated marketing communication research from 1991 to 2012: a co-word analytic approach. *International Journal of Advertising*, 34(4), 678-701. <https://doi.org/10.1080/02650487.2015.1009348>
- Muñoz-Leiva, F., Sánchez-Fernández, J., Liébana-Cabanillas, F., & López-Herrera, A. (2012). Applying an automatic approach for showing up the hidden themes. *Expert Systems with Applications*, 39, 11055-11065. <https://doi.org/10.1016/j.eswa.2012.03.017>
- Muñoz-Leiva, F., Viedma-del-Jesús, M., Sánchez-Fernández, J., & López-Herrera, A. (2012). An application of co-word analysis and bibliometric maps for detecting the most highlighting themes in the consumer behaviour research from a longitudinal

- perspective. *Quality & Quantity*, 46(4), 1077–1095. <https://doi.org/10.1007/s11135-011-9565-3>
- Piacentino, D., Bono, F., Cracolici, M., & Giuliani, D. (2017). A spatial analysis of new business formation: Replicative vs innovative behaviour. *Spatial Statistics*, 21, 390–405. <https://doi.org/10.1016/j.spasta.2017.02.004>
- Piecyk, M., & Björklund, M. (2015). Logistics service providers and corporate social responsibility: sustainability reporting in the logistics industry. *International Journal of Physical Distribution & Logistics Management*, 45(5), 459–485. <https://doi.org/10.1108/IJPDLM-08-2013-0228>
- Strotmann, H. (2007). Entrepreneurial survival. *Small business economics*, 28(1), 87–104. <https://doi.org/10.1007/s11187-005-8859-z>
- Suárez Serrato, J., & Zidar, O. (2016). Who benefits from state corporate tax cuts? A local labor markets approach with heterogeneous firms. *American Economic Review*, 106(9), 2582–2624. <https://doi.org/10.1257/aer.2014.1702>
- Weber, A. (1929). *Theory of the Location of Industries*. Chicago: University of Chicago Press.
- Wu, H., Guo, H., Bing, Z., & Bu, M. (2017). Westward movement of new polluting firms in China: Pollution reduction mandates and location choice. *Journal of Comparative Economics*, 45(1), 119–138. <https://doi.org/10.1016/j.jce.2016.01.001>
- Xu, Y., Shen, Y., Zhu, Y., & Yu, J. (2020). AR2Net: An Attentive Neural Approach for Business Location Selection with Satellite Data and Urban Data. *ACM Transactions on Knowledge Discovery from Data*, 14(2), 1–28. <https://doi.org/10.1145/3372406>

Virginia Perez-Benitez

Professor of Economics and Business Administration at the University of Malaga, Spain, in the Department of Economics and Business Administration. PhD candidate at Doctoral program in Economics and Business, Universidad de Malaga. His research has focused on quantitative methods in business and economics research.

German Gemar

Professor of Economics and Business Administration at the University of Malaga, Spain, in the Department of Economics and Business Administration. He has a PhD in Business Administration from the University of Malaga. His research has focused on strategic management, business, firm survival, tourism, hospitality, the environment, corporate social responsibility, and cultural distance. He also has managed hotels for 15 years and worked as the general manager of the Malaga Provincial Council.