


Bibliometric Analysis of Research on the CAGE Distance Framework in International Business

Loso Judijanto  
IPOSS Jakarta

Article Info	ABSTRACT
<p><b>Article history:</b></p> <p>Received Sep, 2025 Revised Sep, 2025 Accepted Sep, 2025</p> <hr/> <p><b>Keywords:</b></p> <p>Bibliometric Analysis; CAGE Distance Framework; Globalization; International Business</p>	<p>This study investigates the research trends and intellectual structure surrounding the CAGE Distance Framework in international business through a bibliometric analysis. Using Scopus as the primary database and VOSviewer for visualization, the study examines patterns of publication, collaboration networks, and thematic developments over time. The findings indicate that research on the CAGE framework has evolved from general discussions of globalization and institutional distance to more refined applications in analyzing cultural, administrative, geographic, and economic differences. Keyword mapping reveals a concentration of studies on globalization, cultural distance, and administrative distance, with the “CAGE distance framework” emerging as a dominant conceptual anchor. The analysis also highlights the central contributions of leading scholars and institutions, as well as the growing integration of the framework into international management and strategy research. This study contributes by consolidating existing knowledge, identifying intellectual clusters, and outlining opportunities for future exploration, particularly in the context of digital globalization and sustainable business practices.</p> <p><i>This is an open access article under the <a href="#">CC BY-SA</a> license.</i></p> <div></div>

**Corresponding Author:**

Name: Loso Judijanto  
Institution: IPOSS Jakarta  
Email: [losojudijantobumn@gmail.com](mailto:losojudijantobumn@gmail.com)

**1. INTRODUCTION**

International business as a discipline has long been concerned with the challenges and opportunities firms face when expanding across national borders. Theories of globalization, internationalization, and multinational enterprise (MNE) strategies all highlight the significance of cross-country differences in shaping firm decisions. One of the most influential conceptual tools for understanding these differences is the CAGE Distance Framework, introduced by [1]. The acronym CAGE refers to four dimensions of distance that firms must account for when

entering or operating in foreign markets: cultural, administrative, geographic, and economic. This framework provides a structured lens to analyze the liabilities of foreignness and the institutional voids that may hinder market entry, integration, and performance. As such, it has become an essential model in international business research, guiding scholars and practitioners alike in their assessment of global strategy [2]–[4].

The value of the CAGE framework lies in its ability to simplify the complexity of cross-national differences into four broad but distinct categories. Cultural distance

emphasizes variations in language, social norms, and values that can impede communication and trust between firms and stakeholders. Administrative distance accounts for differences in laws, regulations, political systems, and institutional environments that influence governance and compliance. Geographic distance focuses on physical barriers such as transportation, logistics, and time zones that affect trade and coordination. Economic distance highlights disparities in income levels, consumer preferences, and resource availability that shape market attractiveness [5], [6]. Together, these dimensions allow for a multi-faceted evaluation of the challenges MNEs encounter. By integrating these perspectives, the CAGE framework has been adopted in numerous empirical studies and practical applications, particularly in the assessment of foreign direct investment, global supply chains, and international marketing.

Over the past two decades, scholarly attention toward the CAGE framework has grown considerably, reflecting its conceptual relevance and utility. Researchers have applied the framework across diverse industries, regions, and contexts, ranging from emerging markets to developed economies. For example, in global supply chain studies, geographic and economic distances often dominate the discussion, whereas in institutional theory, administrative distance takes precedence [7]. Similarly, cultural distance has been central to investigations of expatriate management, cross-cultural negotiations, and consumer behavior [8]. The adaptability of the framework across different research domains underscores its theoretical versatility. Yet, this proliferation of studies has also resulted in a highly fragmented body of knowledge, where insights are dispersed across journals, disciplines, and methodological traditions.

This fragmentation raises important questions about the intellectual structure and trajectory of CAGE-related research. While the framework is frequently cited, the evolution of its use, the dominant themes that emerge, and the interdisciplinary connections it fosters are not fully understood.

Bibliometric analysis offers a valuable methodological approach to address this gap. By systematically examining publication trends, citation patterns, and co-authorship networks, bibliometric studies can map the growth and development of research on the CAGE framework. Such an analysis not only reveals the extent of scholarly engagement but also identifies key contributions, influential works, and emerging research fronts. It provides a bird's-eye view of how the framework has influenced international business scholarship and where it may evolve in the future.

Moreover, bibliometric approaches have gained increasing recognition in management and business research due to their ability to synthesize large bodies of literature objectively. Unlike traditional narrative reviews, bibliometric analysis leverages quantitative methods to uncover hidden patterns and relationships among publications. For the CAGE framework, such an approach can illuminate how its dimensions have been applied, extended, or critiqued over time. It can also highlight underexplored areas that may benefit from further inquiry, such as the interplay between digital globalization and geographic distance, or the influence of global governance on administrative distance. Consequently, conducting a bibliometric analysis of research on the CAGE framework is both timely and relevant, providing much-needed clarity in an area that has expanded rapidly but unevenly.

Despite its prominence, the academic literature on the CAGE Distance Framework remains scattered, with limited integrative reviews to consolidate insights across different contexts. Existing studies often focus narrowly on one dimension of distance or apply the framework in case-specific analyses, resulting in a lack of holistic understanding. Additionally, there is little systematic knowledge about the trajectory of CAGE-related research, including which topics dominate, how the framework has evolved over time, and what intellectual structures underpin its application. Without such a comprehensive mapping, scholars and practitioners risk overlooking critical

developments, duplicating efforts, or missing opportunities for theoretical advancement. This gap underscores the need for a bibliometric analysis that can objectively chart the state of research on the CAGE framework in international business. The objective of this study is to conduct a bibliometric analysis of research on the CAGE Distance Framework within the field of international business.

## 2. RESEARCH METHODS

This study employed a bibliometric analysis to systematically examine the body of scholarly literature on the CAGE Distance Framework in international business. Bibliometric analysis was chosen because it enables a comprehensive and objective assessment of research trends, citation impact, and intellectual structures across large datasets of academic publications. The analysis focused on identifying publication output over time, key journals, authors, institutions, and countries contributing to the field, as well as the co-citation and co-occurrence networks that reveal thematic clusters. This approach is particularly suited to understanding how the CAGE framework has evolved within international business studies and to mapping the connections between different research domains in which it has been applied.

The data for this study were retrieved from the Scopus database, which is

recognized for its broad coverage of peer-reviewed journals and conference proceedings in management and business research. The search query was designed to capture publications explicitly referencing the “CAGE Distance Framework” or related terms such as “CAGE model” and “distance framework” in titles, abstracts, or keywords. Only journal articles, conference papers, and reviews published in English were included to ensure both quality and accessibility of the sources. To maintain consistency and relevance, publications unrelated to international business or strategy were excluded after a careful screening process. The dataset was then exported in BibTeX and CSV formats, including metadata such as authorship, keywords, affiliations, and citation counts, which served as the basis for bibliometric analysis.

The bibliometric analysis was conducted using VOSviewer, a widely used software tool for constructing and visualizing bibliometric networks. VOSviewer was applied to perform co-authorship analysis (to identify collaboration patterns among authors and countries), citation and co-citation analysis (to determine influential works and intellectual foundations), and keyword co-occurrence analysis (to detect thematic clusters and emerging research topics).

### 3. RESULTS AND DISCUSSION

### 3.1 Co-Authorship Analysis

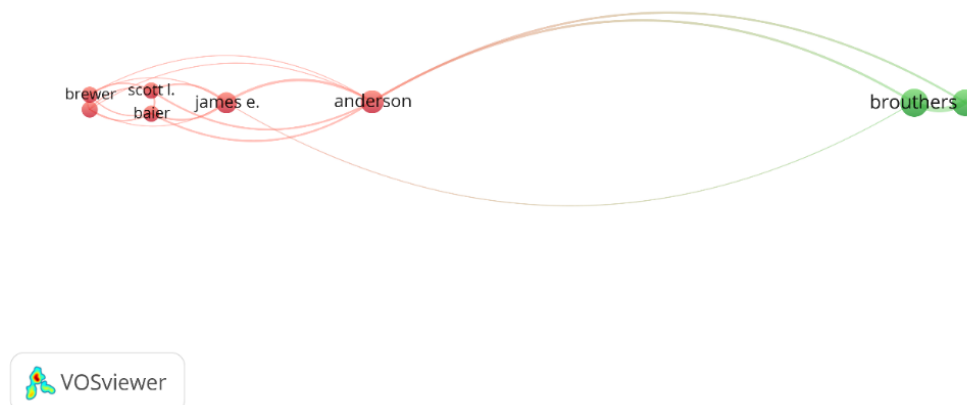


Figure 1. Author Visualization

Source: Data Analysis

Figure 1 illustrates a co-citation network of influential authors in research

related to the CAGE Distance Framework. The map shows two distinct clusters: the

red cluster on the left, consisting of scholars such as Brewer, Scott L., Baier, James E., and Anderson, and the green cluster on the right, dominated by Brouthers. The thickness of the connecting lines indicates the strength of co-citation links, suggesting that while the authors in the red cluster are closely interconnected and frequently cited together, their linkage with Brouthers and

his collaborators in the green cluster is comparatively weaker but still significant. This structure implies that the literature on the CAGE framework has developed around two intellectual poles: one focused on economic and trade-related conceptualizations of distance, and the other emphasizing international business strategy and firm-level applications.

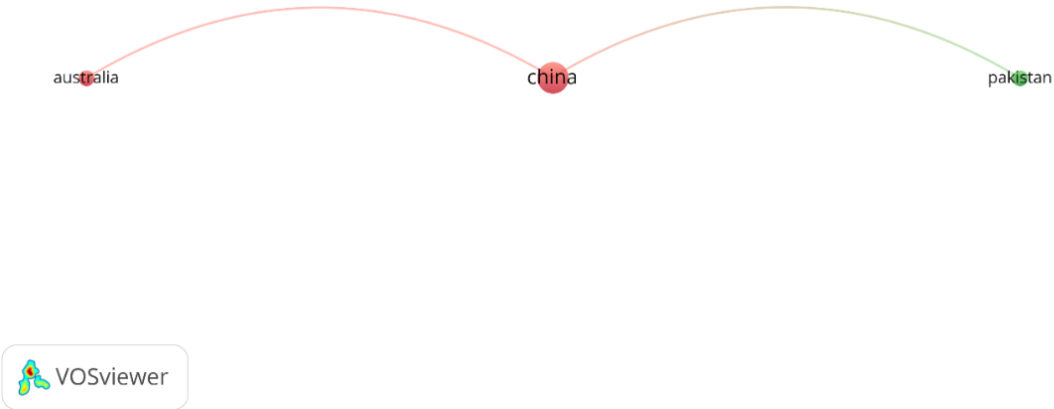


Figure 2. Country Visualization  
Source: Data Analysis

Figure 2 depicts a country collaboration network related to research on the CAGE Distance Framework. China emerges as the central node, serving as a bridge between Australia and Pakistan, indicating that much of the collaborative research flows through Chinese institutions. The links between China–Australia and China–Pakistan suggest

active bilateral academic cooperation, while the absence of a direct link between Australia and Pakistan highlights a lack of direct collaboration between these two countries. The relative size of the China node further suggests its dominant role in research output and partnerships in this area.

3.2 Citation

Table 1. Most Cited Article

Citations	Author and Year	Title
1438	[1]	<i>Distance still matters. The hard reality of global expansion.</i>
822	[9]	<i>ChIPpeakAnno: A Bioconductor package to annotate ChIP-seq and ChIP-chip data</i>
505	[10]	<i>Exercise prevents weight gain and alters the gut microbiota in a mouse model of high fat diet-induced obesity</i>
479	[11]	<i>Rotaxane-based molecular muscles</i>
438	[12]	<i>Multinationals and corporate social responsibility in host countries: Does distance matter</i>
426	[13]	<i>Quercetin increases brain and muscle mitochondrial biogenesis and exercise tolerance</i>
396	[14]	<i>Superconductivity in the silicon clathrate compound (Na,Ba)<sub>x</sub>Si<sub>46</sub></i>

Citations	Author and Year	Title
382	[15]	<i>Inflammation-associated enterotypes, host genotype, cage and inter-individual effects drive gut microbiota variation in common laboratory mice</i>
354	[16]	<i>A survey of estrogenic activity in United Kingdom inland waters</i>
350	[17]	<i>Harmonic coordinates for character articulation</i>

Source: Scopus, 2025

3.3 Keyword Co-Occurrence Network



Figure 3. Network Visualization  
Source: Data Analysis

Figure 3 represents a keyword co-occurrence network that maps the conceptual linkages in research on the CAGE Distance Framework. Two distinct clusters emerge: the red cluster, which revolves around concepts such as “administrative distance,” “cultural distance,” and “globalization,” and the green cluster, which centers on terms like “CAGE framework” and “CAGE distance framework.” The position of “globalization” between the two clusters suggests that it serves as a bridging concept, linking the broader internationalization and distance-related debates with the more specific application of the CAGE framework in scholarly work. This indicates that globalization has historically functioned as the intellectual context within which the CAGE framework has been developed and applied.

The red cluster highlights the role of specific distance dimensions, particularly administrative and cultural distance, as foundational concepts in the international business literature. These

dimensions are heavily interconnected, suggesting that scholars often explore them together when analyzing institutional and cultural challenges in cross-border business. Their close link to “globalization” reflects the fact that these distances are particularly salient when firms internationalize in an increasingly globalized environment. This cluster thus represents the broader theoretical underpinnings that gave rise to the application of the CAGE framework, illustrating its grounding in the study of institutional, cultural, and societal barriers. The green cluster, by contrast, directly focuses on the terminology of the framework itself, “CAGE framework” and “CAGE distance framework.” The strong linkages between these terms reflect a more formalized body of literature that explicitly uses Ghemawat’s framework as a conceptual model. The clustering indicates that these studies are relatively more concentrated and methodologically aligned, focusing on applying the framework to analyze specific business contexts, strategies, and

performance outcomes. The progression from “globalization” to “CAGE framework” suggests a scholarly shift from broader theoretical discussions toward the adoption of a specific analytical tool.

The structure of the network illustrates both continuity and specialization in the literature. The red cluster represents the conceptual roots of distance and globalization, while the green cluster signifies the codification of

these ideas into a recognized framework. The positioning of “globalization” as a bridge implies that the framework was developed to address the challenges posed by globalization, and its evolution has helped refine the understanding of cross-border complexities in international business. This pattern underscores the importance of the CAGE framework as both a derivative of broader theoretical debates and a driver of focused, practical applications in global strategy research.



Figure 4. Overlay Visualization  
Source: Data Analysis

Figure 4 highlights the temporal evolution of research themes related to the CAGE Distance Framework. Earlier studies, shown in blue and green shades (around 2016–2018), concentrated on broad concepts such as “globalization,” “administrative distance,” and “cultural distance,” reflecting the theoretical foundations of cross-border business research. Over time, the focus gradually shifted toward more specific applications of the “CAGE framework” (around 2018–

2019), eventually culminating in a stronger emphasis on the “CAGE distance framework” from 2020 onward, as indicated by the yellow nodes. This progression suggests a scholarly trajectory from general discussions of internationalization and institutional distance toward the formal adoption and refinement of the CAGE framework as a central analytical tool in international business literature.

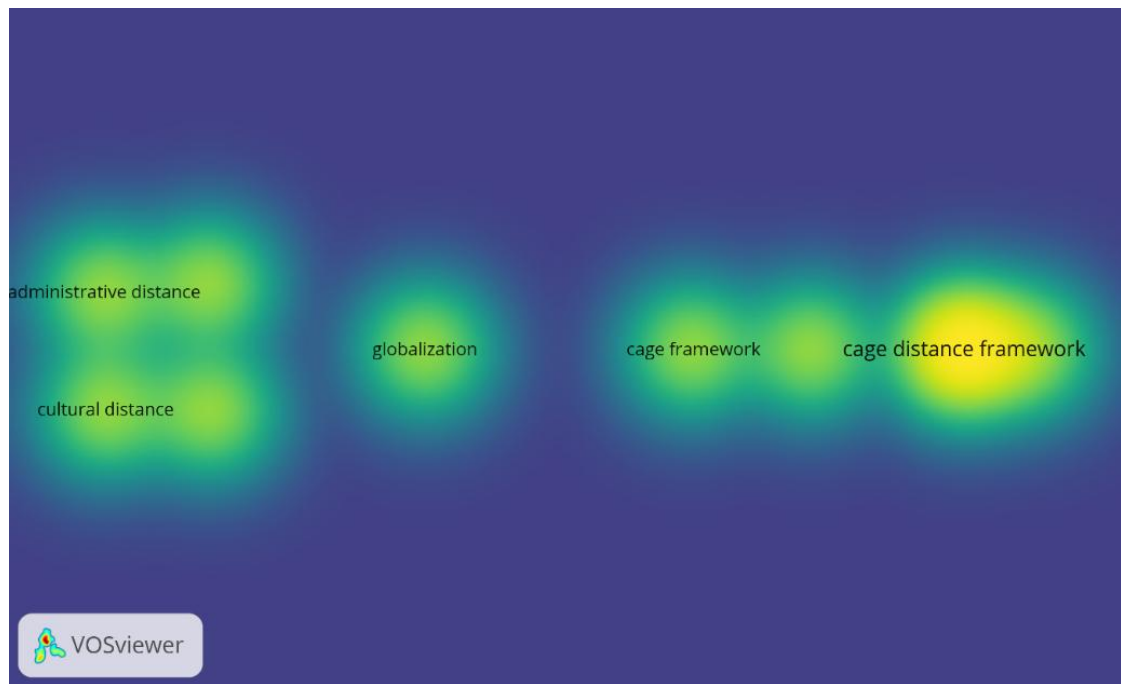


Figure 5. Density Visualization

Source: Data Analysis

Figure 5 highlights the concentration and intensity of research themes associated with the CAGE Distance Framework. The terms “administrative distance” and “cultural distance” appear in areas of relatively high density, suggesting that these dimensions have received consistent scholarly attention as foundational elements in the study of cross-border business. The presence of “globalization” at the center indicates its role as a bridging concept, but with lower density compared to other terms, implying that while important, it has not been the primary focal point of research. The distribution reflects how the theoretical background of distance and globalization laid the groundwork for the eventual prominence of the CAGE framework. On the right side of the visualization, “CAGE framework” and especially “CAGE distance framework” exhibit the highest density, represented by the brightest yellow area. This indicates that in recent years, research has increasingly concentrated on explicitly using the framework as a formal analytical model rather than just discussing its underlying dimensions. The shift from diffuse studies on

globalization and distance to concentrated scholarship on the CAGE framework underscores a growing consolidation of the literature.

### 3.4 Practical Implications

The findings of this bibliometric analysis provide several practical implications for international business managers and policymakers. First, by mapping the evolution of the CAGE Distance Framework, this study highlights which dimensions (cultural, administrative, geographic, or economic) have received the most academic attention, offering managers clearer guidance on which factors are most critical when entering or expanding into foreign markets. For practitioners, the results suggest that cultural and administrative distance remain highly influential, underscoring the need to prioritize cultural intelligence, institutional analysis, and regulatory compliance in global strategy formulation. Moreover, the visualization of author and country collaborations reveals opportunities for knowledge transfer across regions, which can inform multinational firms in developing partnerships with institutions and



markets where expertise on the CAGE framework is strongest. Policymakers, likewise, can use these insights to design policies that reduce cross-border barriers and foster international collaboration.

### 3.5 Theoretical Contributions

This study makes several contributions to the theoretical development of international business research. First, it consolidates a fragmented body of literature by providing a systematic mapping of the intellectual structure surrounding the CAGE Distance Framework, thereby clarifying how the concept has evolved from globalization debates to a widely used analytical model. Second, the analysis identifies key research clusters, showing how the framework has been adapted and extended across different domains such as trade, global strategy, and institutional theory. By doing so, the study reinforces the theoretical versatility of the CAGE framework while also highlighting its role in bridging multiple strands of international business research. Finally, the temporal analysis illustrates the intellectual trajectory of the field, providing evidence that the framework has shifted from being primarily conceptual to becoming a practical and applied model, which can serve as a foundation for future theoretical refinement and interdisciplinary applications.

### 3.6 Limitations

Despite its contributions, this study is not without limitations. First, the bibliometric analysis relies exclusively on publications indexed in the Scopus database, which, although comprehensive, may exclude relevant studies from other databases such as Web of Science or Google Scholar. Second, the analysis is limited to English-language publications, potentially overlooking

important contributions published in other languages that could enrich the understanding of the framework's global application. Third, bibliometric methods, while powerful in revealing patterns and trends, do not allow for deep qualitative insights into the content or context of the studies analyzed. As such, the findings should be complemented with future systematic literature reviews or meta-analyses to provide richer interpretive depth.

## 4. CONCLUSION

This study provides a comprehensive bibliometric analysis of research on the CAGE Distance Framework in international business, revealing its intellectual roots, thematic evolution, and scholarly impact. The results demonstrate that the framework has developed from broad discussions of globalization and institutional distance into a widely adopted analytical tool for examining cross-border business challenges. The mapping of authors, countries, and keywords highlights the growing consolidation of research around the CAGE framework, while also pointing to its versatility across different domains of international business. Importantly, the temporal and density visualizations underscore a scholarly trajectory from dispersed theoretical debates toward a concentrated application of the framework in recent years. By identifying key contributors, dominant themes, and research clusters, this study offers both scholars and practitioners a clearer understanding of how the CAGE framework has shaped, and continues to shape the study of international business. At the same time, it provides a foundation for future research to build on these insights, particularly in exploring how digital globalization and technological change may reshape the relevance of distance in the global economy.

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