Article

Cluster Internationalization: Qualitative Review, Theoretical Direction, and the Rise of Emerging Markets’ Themes

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Abstract: The growing phenomenon of cluster internationalization has enriched the existing international business theories, but has also brought new puzzles and problems for these theories and perspectives. To synthesize what we do and do not know concerning cluster internationalization, we employed the qualitative content analysis method, systematically reviewing 348 articles published during the period 1990–2019, as well as 16,486 references. Our review examined five major areas, including citations, co-citations, theoretical foundations, co-occurrence networks, and three-phase research topics (pre-internationalization, internationalization, and post-internationalization) based on ten keywords. Moreover, we found that the research on the internationalization of emerging market clusters has shown a rising trend in recent years. We took China as an example to conduct in-depth research on three types of cluster internationalization (inward internationalization, outward internationalization, and overseas parks) with a view to expanding the academic perspective of the internationalization of emerging economic clusters. Finally, in order to promote further research on cluster internationalization, potential future themes related to cluster internationalization research are discussed.

Keywords: cluster internationalization; qualitative review; theoretical direction; emerging markets themes

1. Introduction

Since the 1990s, many studies have shown that competitiveness can be enhanced in industrial clusters or regions that are geographically concentrated and sector-specific [1–4]. With the development of economic globalization and industrial internationalization, various resources and production factors have flowed, allocated, and reorganized globally, accelerating the globalization process in the fields of production, trade, investment, and finance, and further promoting regional economic development. As the main carrier of regional economic development, industrial clusters follow this historical trend, actively integrate into the international economy, and participate in the global competition, reflecting the competitiveness and development status of the economies of different countries [5]. As a result, international business scholars and economic geographers have begun to cross boundaries and establish a new conceptual framework in order to gain a better understanding of the emerging pattern of international competition, the process of forming new capabilities, and the development prospects of countries that are striving to improve their positions in various global industries [6].

Besides, it is worth noting that, although emerging economies have played a role on the international stage for 30 years [7,8], since the beginning of the 21st century, the economies of the emerging economies represented by the BRICS, the five BRICS, and the next 11 countries have been growing rapidly. As an important carrier of regional economic
development [1], industrial clusters’ ability to participate in international industrial transfers and adapt to global value chain niche markets will determine the effectiveness of regional development strategies to a certain extent. As an overall analysis unit, industrial clusters have different strategies, capabilities, scales, resources, and even internationalization processes and methods for each member company in their region. However, they are interconnected through the common goals, vision, and technology of the cluster, so that the whole shows a common development trajectory. Therefore, the industrial cluster internationalization capability cannot be equal to the cluster enterprise internationalization capability. Based on the new division of labor in the international market, while the industrial cluster internationalization is reorganizing and opening up more opportunities for the regional innovation process, it will also continue to strengthen global competition and cooperation between industrial clusters, thereby requiring the industrial cluster internationalization to have a sustainable competitive advantage. This highlights the importance of the industrial cluster’s internationalization ability to a certain extent. However, with the rapid development of clustering of emerging economies, their internationalization strategy has gradually become an important research topic. This article focused on the internationalization of clusters in emerging economies, striving to answer: How does the cluster of emerging economies internationalize and how is their international performance affected? Is the internationalization theory in the traditional IB field sufficient to explain the international expansion behavior of emerging economy clusters and their cluster enterprises?

As a result of the internationalization of clusters in emerging economies, on the one hand, there are general laws of cluster internationalization in traditional developed economies, and they are worthy of our overall review; on the other hand, there are also specific particularities that need to be focused on. Therefore, following the rules from general to special, this article made a comprehensive and objective visual analysis of the literature of cluster internationalization. Although qualitative and quantitative research on cluster internationalization is growing, cumulative efforts in this area are still insufficient. In this paper, a qualitative content analysis method was used to summarize 348 academic papers on cluster internationalization published in international journals during 1990–2019, especially for the cluster internationalization of emerging economies. This review aimed to explore the existing literature base, summarize its content, and, more importantly, provide a series of future research directions.

The structure of the paper is as follows. Section 2 analyzes the definition of a cluster and cluster internationalization, and explains the review tools and data sources employed in this article. Section 3 discusses the visualization results of the data in detail, including the citation analysis, co-citation analysis, theoretical foundation, and co-occurrence network. Section 4 presents a framework of cluster internationalization, using ten key words. Section 5 summarizes the literature on the theme of the internationalization of emerging economy clusters, using China as an example. Section 6 develops a future research agenda. Section 7 concludes the study.

2. Literature Review Process

2.1. Industrial Cluster and Cluster Internationalization

Industrial clusters are a worldwide economic phenomenon. It is generally believed that the first economist in the history of economics to explain the theory of industrial clusters was Marshall [9]. Industrial location economist Weber [10] first proposed the concept of an agglomeration economy. Subsequently, Young [11], Hoover [12], and Krugman [13] studied industrial clusters from their respective perspectives. The overall rapid development of the cluster concept occurred in the 1990s, due to the significant contributions of Porter [14]. Porter believed “an Industrial Cluster is a group of geographically close and interconnected companies and related institutions, which are linked together in a specific
Industrial field due to their commonality and complementarity” [15]. This has also become a relatively widely accepted definition of clusters today.

However, in the era of economic globalization, it is undeniable that internationalization has had many effects on the internal structure of the inter-cluster enterprise network and the entire cluster system [16]. Some scholars even believe that the expansion of the global market and the development of international actor networks are important manifestations of the transformation or rebirth of a regional cluster [17]. Islankina [18] believed that the purpose of internationalization of industrial clusters is to establish stable links among industrial clusters through the cooperation of institutions based on trade, finance, industry, research and development, education and cooperation around the world, so as to realize the growth of competitiveness, economic benefits, innovation, and social potential of each member and region within the cluster. Götz and Jankowska [19] believed that the internationalization of industrial clusters refers to the continuous penetration of the international market as a whole and is reflected by the depth and width of the internationalization of cluster enterprises, as well as the changing process in which at least one or more branches of cluster enterprises adopt different internationalization methods and gradually deploy their resources to the international market. Hou [20] thought that the internationalization of industrial clusters means that industrial clusters cross national borders in some form to carry out the allocation of production factors, product marketing, and exchanges with international organizations, as a process of achieving development and upgrading in the economic connection. Based on this, we believe that an industrial cluster is the internationalization of a regional industry cluster as a whole, rather than a single enterprise, in a multi-dimensional and structured manner that is extensive and in-depth to penetrate its business activities into the international market, and providing the cluster with a wealth of explicit and implicit knowledge, innovative ideas, professional skills, as well as the existing knowledge, making cluster members strengthen the process of cooperation network and social capital. It is not only a process that can reflect the enhancement of the main body’s competitiveness, but also shows a result. This result has both a quantitative expansion and a qualitative improvement, which will inevitably have an impact on regional economic development [21].

It is worth noting that through the analysis of the existing literature, the research objects of cluster internationalization can be roughly divided into three categories. The first is the micro level—cluster enterprises. For companies, embedding in local clusters tends to attract foreign investment [22], establish international connections [23], obtain international information and expertise [24], and enhance international innovation capabilities [25], etc., which is enough to show that the cluster provides valuable resources for its start-up or accelerated internationalization. The second is the meso level—the cluster itself and the organization. As a concrete manifestation of cooperation among cluster members, Kowalski and Marcinkowski [26] believed that the actions of a cluster organization are a way to establish international cooperation. Research has shown that cluster organizations can act as an intermediary between cluster enterprises and international business, R&D, or public management entities. They can not only focus on performing a series of specific tasks of cluster internationalization and international cooperation between cluster organizations [27], but also reduce information asymmetry and limit the opportunistic behavior [28]. Related cases include the Dutch flower cluster [29], Chile Wine Cluster [30], and so on. In addition, cluster organizations such as the European Cluster Collaboration Platform (ECCP) provide multiple possibilities for clusters, where mapping and analysis of cluster organizations is a priority. As a result of this, member clusters are visible globally and are, therefore, more likely to be discovered by potential partners [31]. In addition, the Global Cluster Observatory and the European Cluster Observatory also provide a wealth of information about the cluster, providing a guarantee for the cluster’s international strategy. The third category is the macro positive—the cluster initiative, such as the NICER project [32], the MVA ambassador program [33], and the European Cluster Observatory [32]. As a powerful policy tool, the cluster initiative can enhance the
international competitiveness of a region by strengthening the cooperation among cluster enterprises, governments, and research institutions [34].

In this article, we were concerned about the globalization process of the entire cluster, not just the internationalization of individual companies in the cluster, that is to say, we studied the cluster as the main body of internationalization rather than a certain influencing factor. However, the definition and research methods of internationalization of enterprises can also be partially applied to the internationalization research of clusters. Therefore, whether it is the Uppsala model of the traditional internationalization stage, the springboard model of emerging markets, life cycle theory, institutional and psychological distance, or network relationships, all occupy an important position in the study of cluster internationalization. Even some professional terms of internationalization of enterprises are also applicable to cluster internationalization, such as inward internationalization and outward internationalization. Therefore, in this study, the definition of cluster internationalization, paying more attention to the result of the combination of cluster advantages and internationalization characteristics, is a process of establishing global sustainable links such as trade, finance, industry, R&D, education, and institutional cooperation on a global scale, so as to enhance the overall international competitiveness.

2.2. Research Design

2.2.1. Research Methods and Tools

The data used in this study were elicited from journal articles, authors, published journals, publication dates, and cited references. For the purpose of this study, the development trajectory and future development direction of the cluster internationalization research from 1990 to 2019 are discussed.

In order to gain a deeper understanding of the literature context of cluster internationalization, this study used three types of bibliometric software; namely, CiteSpace, Vosviewer, and Histcite. As shown in Figure 1, CiteSpace was used to search and cluster the high-frequency keywords of the data pool literature to find the frontier hot spots of the discipline. VosViewer was used to depict the atlas of co-citation of the literature and co-citation of the authors. Histcite was used to search for the relationship between different reports on the same topic, in order quickly to locate important literature. Based on this, the paper analyzed the trend of this topic, the statistics of literature publication institutions, the statistics of literature publication journals, as well as the specific connection and evolution process of the cited literature.
2.2.2. Data Collection and Screening

The key point of document metrology is the collection and selection of literature. First, we used the Web of Science (WOS) core collection database of the US Clarivate Analytics as the retrieval platform. Secondly, we matched the words “Industrial Cluster, Industrial Distric, Industrial Agglomeration” and “Internationalization, Global, Abroad, Foreign, Overseas and Offshore” with 18 sets of keywords. Thirdly, we retrieved articles according to “time span = 1990–2019”, “document type = Article”, “language = English”, and “research direction = Management or Business or Economics or Geography” before extracting the author, title, source, abstract, citation, and other information and saving them in the format required by each software package. This yielded 362 articles from our first round of review. After removing duplicates through CiteSpace, a total of 343 valid papers and 16,486 references were obtained. To refine this selection, we thoroughly read the abstract of the literature to determine if the article was about cluster internationalization. The final step in the article screening was to review the references of 343 articles to ensure that we had not missed any of the reference studies related to cluster internationalization in our sample. This review helped us identify 34 other articles worthy of inclusion. Ultimately, a total of 377 articles were obtained as our final sample.

3. Data Visualization Analysis Results

3.1. Citation Analysis—Analysis of the Development Status of the Research Field

In this study, in order to identify the major publications and scholars that laid the foundation for cluster internationalization research, the citation data of 377 source documents and 17,112 references were tabulated and analyzed using Histcite software. Citation analysis produced interesting background statistics, which were analyzed for this paper in terms of four aspects: publication time, institution, journal, and author.

3.1.1. Timeline Analysis

Based on the chart analysis of the year of publication, it can be seen that, since 1999, the topic of internationalization of industrial clusters has been studied, but it was not until 2008 that the boom of publications relating to international clusters really started as a result of the global financial crisis. Moreover, as can be seen from the number of publications per year, shown in Figure 2, the research trend of cluster internationalization is
increasing day by day, indicating that the research in this field not only has a foundation, but also an infinite prospect.

| Publication Year | Count | Percent |
|------------------|-------|---------|
| 1999             | 1     | 0.3     |
| 2000             | 3     | 0.8     |
| 2001             | 8     | 2.2     |
| 2002             | 8     | 2.2     |
| 2003             | 10    | 2.8     |
| 2004             | 14    | 3.9     |
| 2005             | 13    | 3.6     |
| 2006             | 15    | 4.2     |
| 2007             | 18    | 5.0     |
| 2008             | 29    | 8.1     |
| 2009             | 24    | 6.7     |
| 2010             | 16    | 4.5     |
| 2011             | 25    | 7.0     |
| 2012             | 29    | 8.1     |
| 2013             | 18    | 5.0     |
| 2014             | 20    | 5.6     |
| 2015             | 21    | 5.9     |
| 2016             | 24    | 6.7     |
| 2017             | 29    | 8.1     |
| 2018             | 30    | 8.4     |
| 2019             | 3     | 0.8     |

**Figure 2.** The year of publication, count, and percentage of the literature.

### 3.1.2. Journal Analysis

In order to analyze the journals more effectively, we used TLCS (total local citation score), TGCS (total global citation score), and Recs (records) from Histcite as the analysis criteria. Since the gap between the journals’ TGCS data and the other two data points was too large, it is not reflected on the chart for purposes of clarity. Similarly, the TLCS data were ranked in descending order to create Figure 3. It can be seen that the highest numbers of local citations and publications were found to relate to Regional Studies. This further reflects the close connection between clusters and regional innovation systems, such as the use of economies of scale and scope of economies, transaction costs, competitive advantages, and innovation German theory to establish a regional innovation network theory system to explain the industrial agglomeration and the development of regional innovation networks in new production areas. At the same time, several scholars have described industrial cluster theory as a new type of regional economic development theory, following the theory of gradient shifts, growth poles, and regional production complexity [35].
3.2. Co-Citation Analysis—Knowledge Based Analysis at the Research Frontier

Through coupling and a thorough citation analysis, both literature coupling and co-citation can reflect the structural relationship and degree of connection between publications, whereas co-citation reflects the relationship between the two cited reports, belonging to the dynamic structure model, which is more advantageous to study and reveals the intrinsic connection between the publications. Therefore, this study used co-citation technology to draw the knowledge framework in the field of cluster internationalization.

3.2.1. Core Articles.

To analyze the co-citation with Vosviewer software, we select “cited reference” as the analysis unit, adjusting the minimum number of cited references to 20, which resulted in 176 papers that met the critical value (Figure 4).
According to the analysis of the data, Bathelt H et al. [36], Porter ME [1], and Humphrey and Schmitz [37] were the top three co-cited documents. The number of citations and total links were (147,1538), (141,1351), and (117,1210), respectively. It can be seen from the network patterns shown in Figure 4 that the circles corresponding to these three documents were the first among the three clusters (blue, green and red). Therefore, it can be affirmed that these three publications laid the foundation for the development of different research topics in the later internationalization of clusters. Subsequently, the number of references and total links to Krugman P [13], Marshall A [9], Jaffe AB et al. [38], Allen J Scott [2], Head K et al. [39], Jacobs J [40], and Porter M [15] were also ranked in the top 10, which jointly constructed the knowledge framework for research in the field of cluster internationalization. Table 1 shows the top 10 most frequently cited articles on cluster internationalization.

**Table 1.** Top 10 most cited articles on cluster internationalization.

| Article Title                                                                 | Author                        | Citation | Pub. Year |
|------------------------------------------------------------------------------|-------------------------------|----------|-----------|
| Clusters and knowledge: Local buzz, global pipelines and the process of knowledge creation | Bathelt H et al.              | 1538     | 2004      |
| The Competitive Advantage of Nations                                         | Porter ME                     | 1351     | 1990      |
| How does insertion in global value chains affect upgrading in industrial clusters | Humphrey and Schmitz          | 1210     | 2002      |
| Increasing returns and economic geography                                   | Krugman P                    | 921      | 1991      |
| Principles of Economics                                                      | Marshall A                   | 909      | 1920      |
| Geographic localization of knowledge spillovers as evidenced by patent citations | Jaffe AB et al.              | 780      | 1993      |
| Agglomeration benefits and location choice: Evidence from Japanese manufacturing investments in the United States | Head K et al.                | 591      | 1995      |
| The Economy of Cities                                                        | Jacobs J                     | 544      | 1960      |
| Clusters and the new economics of competition                                | Porter M                     | 529      | 1998b     |
| Deconstructing clusters: Chaotic concept or policy panacea?                  | Martin R                     | 495      | 2003      |
3.2.2. Core Authors

Selecting “cited authors” as the analysis unit and adjusting the minimum number of cited references to 20, gave 415 papers at the critical value (see Figure 5). Their extensive citations and close links clearly indicated their prestigious status in the cluster internationalization research, and their publications and research work together determined the future development direction of cluster internationalization research.

As can be seen from Figure 5, we were able to draw scholars who have published more than three papers. The result shows that all of the authors were divided into four clusters, which were respectively headed up by Porter ME, Gereffi G, Becattini G, and Giuliani E as the main representatives. This illustrates the in-depth analysis of the topic of cluster internationalization by scholars from different research perspectives, which laid a foundation for the correlation degree analysis of the later research theories. Table 2 lists the top 15 scholars based on the total link strength.

![Figure 5. A network of the co-citation of the authors.](image)

| Rank | Author           | Affiliation                                      | Total Citation | Total Link Strength |
|------|------------------|--------------------------------------------------|----------------|---------------------|
| 1    | Michael E. Porter| Harvard Business School (US)                      | 236            | 1,0439              |
| 2    | Harald Bathelt   | University of Toronto (Canada)                   | 133            | 7794                |
| 3    | Elisa Giuliani   | University of Pisa (Italiana)                     | 135            | 7559                |
| 4    | Peter Maskell    |                                                  | 120            | 7522                |
| 5    | Gary Gereffi     | Duke University (US)                             | 139            | 6695                |
| 6    | Leslie R. Martion|                                                  | 103            | 6523                |
| 7    | Becattini G      |                                                  | 119            | 6241                |
| 9    | Michael Storper  | London School of Economics and Political Science (UK) | 108            | 6208                |
| 10   | Schmitz H        |                                                  | 118            | 5043                |
3.3. Theoretical Foundation

We classified the theories adopted in 358 studies (Table 3) and the results show that location and industrial cluster theory, global value chain (GVC) theory, internationalization theory, networking theory, and evolutionary theory were the five most-widely used theories to study cluster internationalization.

Table 3. The high-frequency words in the literature.

| Theory Name                                      | Total | Percentage |
|--------------------------------------------------|-------|------------|
| Location and industrial cluster theory           | 52    | 13.61%     |
| Global value chain (GVC) theory                  | 39    | 10.21%     |
| Internationalization theory                      | 24    | 6.28%      |
| Evolutionary theory                              | 20    | 5.24%      |
| Innovation and Innovation system theory          | 16    | 4.19%      |
| Networking theory                                | 13    | 3.40%      |
| Organizational learning theory                   | 12    | 3.14%      |
| Dynamic capacity theory                          | 10    | 2.62%      |
| Competitive advantage theory                     | 7     | 1.83%      |
| Knowledge spillover theory                       | 5     | 1.31%      |
| Resource-based view (RBV) theory                 | 5     | 1.31%      |
| Institutional theory                             | 3     | 0.79%      |
| Agency theory                                    | 2     | 0.52%      |
| Transaction costs theory                         | 2     | 0.52%      |
| Moderate complexity theory                       | 1     | 0.26%      |
| Transboundary theory                             | 1     | 0.26%      |
| Other theory                                     | 70    | 18.32%     |
| Literature review only/no specific theory        | 100   | 26.18%     |
| Total                                            | 382 a | 100%       |

* The total number in this table is larger than 166 because some articles employed more than one theory.

Figure 6 and Table 4 list the empirical methods and data sources used in cluster internationalization studies. Consistent with the results of previous studies, studies using quantitative methods accounted for 62% of the total research articles. The remaining 38% were qualitative studies. Half of these qualitative studies were either case studies or field studies using descriptive or theoretical analysis, focusing on the theoretical dialogue of cluster internationalization. In terms of the data sources, 55% of the articles used archival data, 35% used survey data, and 10% did not use any sources. Regarding quantitative research methods, 61.4% of the studies used archival data and 38.6% used survey data. The data show that the current research on cluster internationalization is still based on empirical evidence. However, with the current developments and emergence of new phenomena, we believe that qualitative research will bring produce more divergent thinking and unexpected possibilities.
### Table 4. Research methods and data sources.

| Research Method               | Survey | Archival | Other | Total | Percentage |
|------------------------------|--------|----------|-------|-------|------------|
| Quantitative method          | 136    | 86       | 0     | 219   | 61.2%      |
| Lab/experiment               | 1      | 0        | 0     | 1     | 0.29%      |
| Case study/field study       | 34     | 6        | 42    | 74    | 20.7%      |
| Descriptive/theoretical analysis | 30   | 2        | 40    | 64    | 18.4%      |
| Total                        | 201    | 94       | 82    | 377   | 100%       |
| Percentage                   | 53.3%  | 26.1%    | 23.6% | 100%  |            |

3.4. Co-Occurrence Network—Analysis of Research Hotspots

In order quickly to understand and master the cutting-edge theories, mainstream research topics, scientific methods, and development trends in the field of the internationalization of a cluster, this paper used the Citespace visualization tool to conduct a co-word exploration and cluster analysis of the essential phrases in this field and explored the research hotspots in depth. A total of 246 high-frequency words and 1019 links were obtained through software detection. After merging terms with similar meanings, the high-frequency words were extracted (Table 5), and the frequency, emergence, intermediate centrality, and sigma value (calculated based on the centrality and emergence) are listed below.
Table 5. The high-frequency words in the literature.

| Period of Time | Year | Freq | Burst | Centrality | Σ  | Keyword                                      |
|----------------|------|------|-------|------------|----|---------------------------------------------|
| 2000–2005      | 2000 | 300  | 7.23  | 0.36       | 9.21| Foreign direct investment                   |
|                | 2000 | 67   | 0.12  | 1          |     | Agglomeration economics                     |
|                | 2000 | 66   | 0.10  | 1          |     | Industrial cluster                          |
|                | 2000 | 27   | 6.10  | 0.08       | 1.56| Regional development                        |
|                | 2002 | 44   | 5.53  | 0.05       | 1.33| Multinational enterprises                   |
| 2000–2005      | 2002 | 40   | 4.43  | 0.01       | 1.51| Economic growth                              |
|                | 2002 | 28   | 4.15  | 0.09       | 1.13| Location choice                             |
|                | 2003 | 31   | 7.44  | 0.09       | 1.11| Spillover effect                            |
|                | 2004 | 37   | 4.95  | 0.09       | 1.55| Industrial district                         |
|                | 2004 | 43   | 3.67  | 0.26       | 2.33| Industrial policy                           |
|                | 2005 | 20   | 5.29  | 0.05       | 1.19| Global value chain                          |
| 2006–2010      | 2006 | 24   | 4.27  | 0.09       | 1.28| Local firms                                 |
|                | 2007 | 19   | 4.75  | 0.04       | 1.10| FDI (foreign direct investment) inflows     |
|                | 2006 | 11   | 4.75  | 0.04       |     | Competitive advantage                       |
|                | 2007 | 8    | 4.30  | 0.05       | 1.24| Global production network                   |
|                | 2010 | 8    | 4.00  | 0.01       | 1.02| Policy maker                                |
|                | 2010 | 14   | 4.00  | 0.04       |     | Knowledge spillover                         |
| 2011–2015      | 2011 | 26   | 3.71  | 0.04       | 1   | Developed countries                         |
|                | 2012 | 5    | 0.03  | 1          |     | Chinese firms                               |
|                | 2012 | 5    | 0.03  | 1          | 1.02| FDI location                                |
|                | 2014 | 10   | 0.03  | 1          | 1   | Positive effect                             |
|                | 2014 | 2    | 0.01  | 1          |     | Semi-structured interviews                  |
|                | 2015 | 4    | 0.01  | 1          |     | Business group                              |
| 2016–2018      | 2016 | 4    | 3.76  | 0.03       | 1.31| Emerging markets                            |
|                | 2017 | 2    | 0.02  | 1          |     | Cross-border acquisition                    |
|                | 2017 | 4    | 0.01  | 1          |     | Institutional factor                        |
|                | 2018 | 3    | 0.01  | 1          |     | Global pipeline                             |
|                | 2019 | 2    | 0.01  | 1          |     | Sustainability, innovation and high-quality development |

4. A Framework for Cluster Internationalization

In the research process of cluster internationalization, several scholars have tried to establish a research integration framework, such as the “environment–strategy–performance” research framework [41] and the GIS framework of global innovation strategy [42]. However, these frameworks only focus on one aspect of cluster internationalization and have not yet formed an integrated framework covering the whole process of cluster internationalization.

After summarizing the synonyms of the high-frequency words obtained from the Citespace analysis, nine clusters’ keywords were extracted: dynamic mechanism, strategy, entry mode, network, structure and dynamic capability, knowledge spillover, governance, evolution, and upgrading performance. The theme was further sublimated to obtain the integrated research framework of cluster internationalization (Figure 7). The framework shows the whole process, including the three stages—pre-internationalization, internationalization, and post-internationalization, which are the main interests of the study. Due to space constraints, I will only discuss one important research topic at each stage.
**Figure 7.** A framework of the research topics.

### 4.1. Pre-Internationalization—Motivation

From the literature summary analysis, the author believes that the motivation of cluster internationalization can be divided into the following three main aspects:

(a) Expansion tension. The concept of a “spatial fix” [43] provides a reasonable explanation for the periodic spatial transfer generated in the process of capital accumulation, for two reasons. One is that some part of the total capital will become an obstacle to capital flow once it has become fixed geographically in some physical form for a long time. Secondly, the long-term accumulation of capital far exceeds the level of profitable reinvestment, characterized by the production and exchange of goods, so it is inevitable that it will expand and absorb new space for development. Of course, scholars have also empirically tested the theory from different perspectives [44].

(b) Overseas market attraction. The topic of the global economy is itself interdisciplinary, and scholars in this field must master the “art of invasion” [45]. The attraction of the overseas market mainly comes from two aspects. On one side is the external connection of the cluster. On the other side is the gathering of multinational enterprises in local clusters [46].

(c) Policy traction. It is undeniable that the majority of innovation activities are directly related to the political stability of the government, macroeconomic and microeconomic rules, incentive mechanisms, and public plans, and clusters are no exception. The institutional background [47], financial support [32], and the publicly funded cluster plans [48] can not only draw attention to government policy issues, but also reveal and help to solve the problems related to the private sector [49].

### 4.2. Internationalization—Capability

Since the research on knowledge spillover has mainly focused on the study of knowledge absorption capacity and dynamic learning capability in the process of cluster internationalization, this paper divided the related research on the internationalization capability of industrial clusters into four aspects: network capacity, absorption capability, and governance capability [50].

#### 4.2.1. Network Capability

The focus on network capability in cluster internationalization marks a shift in the vision of the cluster economy from tangible assets (such as common services and auxiliary facilities) to related assets (such as the spirit of cooperation, local “buzz”, social norms and practices) [36]. Gordon and McCann [51] proposed three ideal typical cluster models, one of which is the social network model. It refers to the important role in local networks of
interpersonal relationships, trust, and institutionalization in promoting businesses in specific regions to come together. In the process of cluster internationalization, network capabilities are more important for the dissemination of tacit knowledge, such as internationalized knowledge, internationalized experience, and internationalized technology. Cant and Tambunan [17] further confirmed this by studying six industrial clusters in Indonesia. He found that some clusters in Indonesia have gradually become export-oriented. Among them, the developed network, especially with traders, commercial banks, and foreign tourists, is an important factor in their growing export activities. Even these agents are more important to their successful export than government support. In all, the regional dynamic capability of the new network model formed by the fusion and intersection of global capital and local clusters explains the difference between the international competitiveness and performance of clusters [52,53]. Besides, cluster enterprises rely on the “cluster effect” to embed into the global value chain. The capability to utilize and innovate the knowledge in the global value chain is the key point for the international growth and cluster upgrade of cluster enterprises. Good network attributes are the external driving force for cluster enterprises to obtain international innovation resources [54].

4.2.2. Absorptive Capability

Many scholars have proved that knowledge innovation is affected not only by the embeddedness of the external network of the enterprise, but also by the strength of its own absorptive capacity attributes [55], this can lead to significant differences between cluster organizations [56]. Valdaliso et al. [57] believed that social capital and internationalization are both feasible paths for improving the absorptive capacity of clusters. International knowledge spillover has become an important engine for developing countries and countries in transition to catch up with the internationalization process [58]. Giuliani et al. [59] and Giuliani [56] explored the attributes of the knowledge network structure during the internationalization of different regions of the wine-growing clusters in Italy and Chile. They pointed out that knowledge is not disseminated symmetrically and evenly among the companies in the region. Instead, knowledge flows basically through central corporate groups with a greater absorptive capacity. In examining the coupling relationship between network capacity and absorption capacity at a deeper level, Giuliani [56] found that a network determined by geographical proximity is not equal to one of knowledge dissemination or innovation, and that absorption capacity is the best explanation for the difference between them.

4.2.3. Governance Capacity

Enright [60] proposed that cluster governance deals with the relationship between cluster enterprises, which is essentially the power relationship and power distribution within the cluster. Therefore, the capacity for cluster international governance is based on the capability of industrial clusters to achieve the goal of industrial cluster governance through the governance mechanism in the process of internationalization. The most widely discussed topics are governance subjects and governance mechanisms. Generally, we consider cluster institutions and cluster enterprises as the main body of cluster international governance. The traditional Marshall cluster mainly focuses on the governance under the internal links of the cluster (including trust, specialization strategy, and vertical disintegration, etc.), while the network governance under the concept of a global commodity chain places more emphasis on the power relationship and driving force of the dominant enterprise, which is believed to affect the development trajectory of the region or cluster embedded in the global value chain [61]. In addition, the internationalized governance mechanism of industrial clusters is essentially an institutional arrangement, including various formal and informal rules, such as policies, laws, practices, social norms, etc. They have constraints and incentives regarding the interactive activities of the cluster participants, including social mechanisms and incentive and constraint mechanisms based on the functions of industrial clusters, relationship-based coordination mechanisms...
and interaction mechanisms, process-based restricted access mechanisms, information disclosure mechanisms, and sharing mechanisms [62,63].

4.2.4. Cross-Cultural Competence (CCC) and Cultural Intelligence (CQ)

With the deepening of economic globalization, the highly complex and severe challenges, such as duality, paradoxes, and diversity, faced in the process of cluster internationalization are intensifying. Many scholars have emphasized that CCC is one of the prerequisites for the success of transnational organizations [64,65]. Although Gertsen [66] was the first one to define CCC, Johnson et al. [67] defined CCC, from the IB field, as the effectiveness of an individual using a set of knowledge, skills, and personal attributes in order to in order to successfully cooperate with people from different countries and cultural backgrounds at home or abroad. A large number of subsequent definitions and dimensional divisions have also evolved from above contributions [68,69]. In addition, a consensus has also been reached that CCC is a combination of personal attributes (such as personality traits, values, etc.), cognitive knowledge and skills (such as cognitive ability, cultural knowledge), and motivation, which are important for the internationalization of clusters (organizations or enterprises)[70].

Moreover, CQ is one of the most frequently mentioned CCCs [71], providing a micro perspective of cluster internationalization research. Essentially, as a type of intelligence, CQ reflects the capability of individuals to collect and process information, make judgments, and take effective actions to adapt to the new cultural environment, including the four elements of metacognition, cognition, motivation, and behavior [72–74]. Due to the differences in CQ among different individuals [75], scholars have also tried to explain this by constructing different measurement models [72]. Of course, CQ is also affected by many factors, mainly divided into individuals (such as international experience, personality characteristics, etc.) [71] and global situations (working environment, task characteristics, etc.)[76]. In addition, scholars are also keen to study the effect of CQ under different paths on cluster internationalization, such as the moderating effect on the expatriates and innovation performance [77,78], the marketing adaptation and export performance [79], the communication effectiveness and job satisfaction [80], and its significant contribution in relieving institutional pressure [81].

4.3. Post-Internationalization—Evolution

System theory holds that evolution is a universal property of a system. In fact, once a cluster has been formed, it may go through multiple trajectories [16] and cannot be observed statically. Research by Fornahl et al.,[82] revealed four phases of the cluster life cycle: emergence, growth, sustainability, and decline. They also argued that cluster dynamics only play a positive role between two points. The first point follows the emergence of the cluster, when the number of enterprises in the cluster reaches a critical value, the cluster dynamics begin to appear. The second point is when the cluster stops dynamically or a negative situation occurs in the cluster, the cluster will also update itself and return to the initial stage of the life cycle [82]. Li et al., [83] opened up a new perspective on the study of cluster evolution by linking the cluster life cycle model with network dynamics. They proposed the impact of social and business networks on the life cycle of the cluster. Besides, many scholars have also researched the perspective of cluster life cycle differences, such as localized learning [84], openness [85], and the increasing level of specialization.

In addition, in the recent discussion, the cross-fusion research of “cluster” and “sustainable development” has received more and more attention [86]. On the one hand, government and market expectations for comprehensive environmental, social, and governance issues continue to increase, forcing public or private companies to combine partners and establish networks. On the other hand, companies can no longer act as independent entities on an isolated scale [87]. Therefore, the sustainable development of cluster internationalization has become one of the important indicators of its international
competitiveness. The main research results include: increasing the interest in innovation, including ecological innovation; knowledge transfer between cluster members and business environment institutions [88,89]; the influence of the government, social groups, private sector, etc. on the strategic goals of cluster internationalization [90]; and cultivation of cluster international trust from the perspective of social capital [91,92], etc. Future related research will be more abundant.

5. The Research Status of Cluster Internationalization on Emerging Markets’ Themes

The accelerated integration and synchronous development of global and emerging markets (EM) has stimulated extensive research on the internationalization of emerging market clusters. Previous research has found, that since the financial crisis in 2007, research on the internationalization of emerging market clusters has shown a strong and sustained upward momentum (Figure 8).

![The topic of EM](image)

**Figure 8.** Year distribution of articles on EM cluster internationalization.

However, out of 348 searched research articles, Table 6 shows that there were 228 papers on the internationalization of developed economies clusters, while only 96 on emerging economies. In addition, there were only two research papers on emerging economies serving as the origin of clusters and the host country of outward internationalization, while only one paper on the subject of overseas clusters, which simply discussed the impact of overseas clusters on local economic development. It can be seen that the existing literature lacks in-depth research on the internationalization of emerging economy clusters and the causes, paths, influencing factors, and life cycles of overseas clusters.
Table 6. The literature distribution regarding the cluster internationalization path and host country attributes.

| Home Country/Research Object | Internationalization Path | the Host Country | the Literature Number |
|------------------------------|---------------------------|------------------|----------------------|
| Developed Markets            | Inward Internationalization |                | 103                  |
|                              |                           | Developed Markets | 78                   |
|                              |                           | Emerging Markets  | 11                   |
|                              | Outward Internationalization |                |                      |
|                              |                           | Developed Markets | 6                    |
|                              |                           | Emerging Markets  | 5                    |
|                              | Overseas Cluster          | Developed Markets | 0                    |
|                              |                           | Emerging Markets  | 3                    |
|                              | Others                    |                  | 25                   |
| Emerging Markets             | Inward Internationalization |                | 35                   |
|                              |                           | Developed Markets | 20                   |
|                              |                           | Emerging Markets  | 2                    |
|                              | Outward Internationalization |                |                      |
|                              |                           | Developed Markets | 0                    |
|                              |                           | Emerging Markets  | 3                    |
|                              | Overseas Cluster          | Developed Markets | 0                    |
|                              |                           | Emerging Markets  | 3                    |
|                              | Others                    |                  | 36                   |
| Markets in general           |                           |                  | 34                   |

Based on the above statistics, we further analyzed and found that, in the research on the theme of internationalization of emerging economic clusters, the main countries involved were Brazil [93], Chile [94], Poland [27], Turkey [95], India [96], and so on. Baldwin [97] proposed in *The Great Convergence* that the spatial organization of economic activities depends on the cost of three types of elements: products, ideas, and people, which are successively reduced. During the industrial revolution, the cost of moving products fell, then the cost of moving ideas dropped with the revolution in information and communication technology. In the future, the evolution of technology will reduce the cost of moving people. Baldwin believed that China has been one of the main beneficiaries of globalization. Also, several scholars have pointed out that mainland China is the world’s most successful country in terms of using cluster internationalization to build industrial capabilities [98]. Therefore, taking the Chinese cluster as an example, it is of great value to study the new phenomena and problems that emerged in the process of internationalization.

The development of information technology has made it possible for transnational corporations to transfer labor-intensive work to developing countries [97]. There is a huge pool of cheap, high-quality workers in China. In order to keep the whole manufacturing process in step, these companies also export their marketing, management, and technical knowledge, together with the outsourcing work[97]. Having absorbed these technologies and knowledge in a stable political and social environment, China continues to internationalize, and industrial exports have created industrial clusters, which, in turn, have at least created the conditions for industrial innovation.
We next focused on special research on the development of cluster internationalization in the Chinese context. Referring to the research of Zheng et al. [99], and combining it with the current situation in China, we were able to expound three internationalization modes of industrial cluster: inward internationalization, outward internationalization, and overseas industrial clusters.

5.1. Inward Internationalization

The inward cluster internationalization mode, namely the cluster strategy of “bring in”, mainly refers to a cluster that is based on the domestic market by using a large amount of foreign investment, but also includes imports, the purchase of technology patents, franchising, domestic joint ventures, and cooperation to seek large multinational companies to the cluster roots, supporting the development of enterprises and foreign enterprises within the cluster and form to enhance the overall technical level and competitive capability of the cluster, in order to obtain a continuous dynamic force of development [62].

Integration into global value chains will undoubtedly bring unprecedented opportunities for China’s manufacturing sector [100], but it will also create obstacles for further upgrading of China’s manufacturing sector [6]. On the one hand, the nature of this model is often to attract foreign investment only by relying on cheap resources, so the uncertainty of foreign migration [101], excessive path dependence on FDI [102], and the paradox of industrial chain upgrading [103] will affect the independent innovation capability of local enterprises [104], ultimately leading to the failure of enterprises to escape the lower end of the value chain. On the other hand, the positive spillover effect of FDI does not necessarily occur. Specialized industrial structure, industrial agglomeration intensity within and between cities [105], industry type [106], geographical distribution of FDI [107], etc. will all affect the absorption of FDI spillover capability. Similarly, due to differences in absorptive capacity, the extent to which domestic-funded enterprises in the cluster benefit from FDI also varies significantly [108]. Clearly, the key to the inward internationalization of the cluster lies in how to move from introduction to absorption and finally realize independent innovation [109]. The high-tech manufacturing sector and the less knowledge-intensive services sector have benefited most from globalization, so a focus on developing foreign linkages in these sectors would translate into more innovative development [110].

5.2. Outward Internationalization

The outward internationalization of the cluster, also known as the “going out” strategy, refers to the provision of a package of production factors, such as products, technology, and funds, by the cluster enterprises to the international market, which, in turn, drives the overall internationalization of the cluster on the basis of the internationalization of the production process [111]. Scholars on the outward internationalization of clusters have paid more attention to the internationalization of cluster enterprises [112].

In the past, in China, the internationalization of industrial clusters was mostly limited to export products (mainly processing trade exports), technology transfer, or licensing trade and other activities with a low status in the global value chain. However, when China’s demographic dividend gradually disappears and the comparative advantage of labor cost proves unsustainable, the low-end internationalization mode of cluster will encounter a huge bottleneck [113]. Therefore, since 2008, many cluster enterprises, especially private ones, have begun to go abroad and enter the international market, taking a variety of forms of foreign direct investment, such as overseas investment, international subcontracting projects, joint ventures, international strategic alliances, overseas R&D institutions, and production bases etc., which opened up a new chapter for overseas investment by Chinese cluster enterprises [114].

When comparing the outward internationalization of the clusters from emerging economies with ones from developed economies, some specialties of the emerging economies will emerge. First of all, as a “technological catch-up” country, cluster enterprises in the process of outward internationalization often seek technology research while the
development of the internationalization motivation is relatively strong and priority is given to the reverse knowledge spillover conduction mechanisms [115]. Secondly, the institutional quality of China, the institutional distance between China and the host country, and government participation all exert a strong influence on the performance of cluster internationalization. The research of Tang and Tang [50] showed that the support of government policies, the quality of the home country system, and the improvement of the financing environment all play a positive role in promoting and protecting the outbound internationalization of Chinese clusters to varying degrees, which is a specific institutional advantage in determining whether clusters can successfully implement OFDI. Thirdly, the research on cluster internationalization in China has mainly focused on small and medium-sized private enterprises, most of which are still in their infancy, while that in developed countries has focused more on large multinational corporations [116]. Finally, regarding the theoretical research of cross-cultural competence and cultural intelligence, the embedded influence mechanism of China’s special domestic and foreign situations is clearly different from that of developed economies [117,118], but still insufficient.

5.3. Overseas Industrial Parks

As early as 1995, China had begun to explore the construction of overseas parks and, in 2006 and 2013, it engaged in two rounds of expansion. The first round was the official launch of the Overseas Economic and Trade Cooperation Zones (OETCZ) construction project in 2006. In the seven-year period from 2006 to 2013, a total of 77 new overseas industrial parks were established, which was three times that during the period from 1995 to 2006. The second round was the 2014 “Belt and Road” initiative. China’s overseas industrial parks have surged again, adding more than 100 in five years, which is close to the total for the previous 19-year period. Overseas economic and trade cooperation zones (OETCZ) are the result of a surge in demand for overseas investment by Chinese cluster enterprises.

At present, the academic research on overseas parks is gradually increasing, mainly reflected in: (1) Research on the policy effect of OETCZ. OETCZ has received strong support from the national level and even local governments. This form of high-level dialogue has greatly reduced the risk of SMEs going to sea alone [119]. (2) Research on the legality of OETCZ. Transnational organizations in emerging economies need long-term deployment and diversified capabilities to acquire, maintain, and improve their organizational legitimacy for constructing overseas innovation ecosystems [120]. (3) Research on the functions, effects, problems, and suggestions related to overseas parks. Scholars generally believe that OETCZ plays a dual role of providing a platform for Chinese enterprises to invest abroad and promoting the economic development of the host country [121]. (4) Research on the commercial properties of OETCZ. In essence, the overseas park is completed by enterprises and is a commercial project, so greater consideration needs to be paid to input and output, risk management, sales profitability, and other issues [122]. (5) The latest research has proven that the development of OETCZ, especially in the “area” all along the country park, sometimes needs a top-up in order actively to support and promote substantial environmental improvement, but this does not mean dependence on government policy. OETCZ’s long-term sustainable development is still a market leading theme that finally realizes the political and diplomatic influence mode of the coordinated development of benign interaction with the other economic business benefits [123].
5.4. A Critical Assessment of Cluster Internationalization on Emerging Markets’ Themes

Although the internationalization of clusters of emerging economies is becoming more common and attracting widespread attention from scholars around the world, there remains some research confusion.

Firstly, for inward internationalization, the current research suggests that emerging market clusters have the capability to attract high-quality foreign capital, technology, management, etc. to enter the market to bring about all kinds of “static” (such as job creation, export growth, government revenue, and foreign exchange revenue, etc.) or “dynamic” (such as skills upgrading, technology transfer and innovation, economic diversification, increasing the productivity of local businesses, etc.) economic benefits, and also analyze the spillover effects with various influencing factors, but the process of how to spill or absorb is still unknown.

Secondly, for outward internationalization, we cannot ignore the institutional problems of the emerging markets, not only institutional voids and institutional distance, but also the institutional complexity; that is, too many institutions are contradictory, conflicting, heterogeneous, unstable, and ambiguous, leading to the existence of a variety of different institutional logics that may be compatible or incompatible in the same space. This will not only raise concerns and restrictions regarding resource mobilization, promote internal tensions, and lead to a lack of internal legitimacy, but also prompt challenges to legitimacy due to the competing requirements and logical incompatibility between social risks and institutional provisions. How to coordinate the institutional factors with other factors (such as location selection, time decision, experience, and entry methods, etc.) to better realize the “going out” strategy is an important issue currently.

Thirdly, for overseas industrial parks, although the current concept of the OETCZ is only available in China, this does not mean that other emerging economies cannot follow suit. Can it also bring good economic and social benefits? If not, how will it be affected? How to adjust? These issues are yet to be resolved. Moreover, the attention of international scholars on China’s overseas economic and trade cooperation zones is currently mainly focused on the particularity of its investment methods and the leading role of the government in this area [124], but, if it is only at the government or macro level, why are there so many private enterprises competing to bid or settle in the park? Obviously, the existing theories and research still cannot explain many real situations.

6. Toward a Research Agenda

The above review provides us with a picture of the academic foundation of cluster internationalization, and also informs us about what we do not know, through an assessment of 348 papers published in international journal articles over the past 20 years, as well as their 16,486 references. Table 7 lists our suggestions for future research in this field, but this by no means excludes other areas of research.

| Cluster Internationalization | Critical Research Questions |
|-----------------------------|-----------------------------|
| Pre-internationalization     | • Are the factors endogenous? When influencing factors are presented in the form of complex ecosystems, how do we solve the mystery of what causes what? |
| Conditional complexity       | • In addition to the static characteristics of the cluster, how do the dynamic characteristics (pre-experience, R&D capabilities, etc.) affect the process and performance of cluster internationalization? |
| Category                        | Questions                                                                                                                                 |
|--------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|
| Motivation dynamics            | Do the activation and maintenance motivations of cluster internationalization differ? What are the motivations to sustain? What is the correlation between them? |
|                                | What is the dynamic evolution of the motivation factors in the different stages of the cluster internationalization life cycle?            |
|                                | To what extent can the functions of the cluster local network be transferred and used in international networks, and vice versa?           |
|                                | Do the capability or knowledge transfer mechanisms differ within and between clusters during the internationalization process? How do the individuals in a cluster act and interact to promote the flow and transfer of capability or knowledge? |

| Capability to transfer         | To what extent can the functions of the cluster local network be transferred and used in international networks, and vice versa?           |
|                                | Do the capability or knowledge transfer mechanisms differ within and between clusters during the internationalization process? How do the individuals in a cluster act and interact to promote the flow and transfer of capability or knowledge? |
|                                | How to improve the international management level of clusters by improving their CQ and CCC? What is the relationship between an individual’s CCC or CQ and the organizational structure of the cluster? What is the internal logic of CQ and CCC? Does it have non-linear development characteristics? |

| Internationalization          | When, where, and how will cluster policy support/hinder cluster internationalization?                                                                 |
|                                | What is the difference between the impact of formal and informal institutions on cluster internationalization? |
|                                | How to deal with the support/obstruction of the government (home country or host country) in different aspects? |
|                                | What is the combination and synergy of different policy tools? How does this affect the performance? |
|                                | From the perspective of sustainable development, what are the dynamic mechanisms, operating mechanisms, and development models of cluster internationalization? Do they vary with different countries? |
|                                | How to balance the distribution of resources and benefits between large and small enterprises to achieve sustainable goals? |
|                                | How to build a sustainable international ecological performance evaluation system for clusters? |
|                                | Does the co-evolution of multiple networks affect the innovation performance of cluster internationalization? How? |
|                                | How does the heterogeneity of cluster size, technology, and institutional environment affect the innovation evolution of clusters? |
|                                | What process promotes or hinders the cluster’s internationalization path dependence? |
|                                | Does the emergence of a specific clustered FDI pattern have specific social causality? Why and how? |
|                                | How are the routines reassembled of international clusters? What impact will this have on the construction of social beliefs, norms, and relationships? |
|                                | Will the local embedding and path dependence of the cluster limit or reduce its international innovation (radical vs. incremental innovation) performance? How? How is this regulated? |

| Special issue of emerging markets’ cluster internationalization | Inward International catch-up |
|--------------------------------------------------------------|--------------------------------|
|                                                              | Are the catch-up aspirations and capabilities of lower order clusters affected by global linkages and local context interactions? Do they promote or hinder them? |
7. Conclusions

In this paper, we reviewed the research on cluster internationalization for nearly 20 years, trying to find the limitations of the literature. Based on our qualitative review and in-depth analysis of the contents of cluster internationalization research, it is clear that significant progress has been made in our understanding of the factors influencing cluster internationalization, motivations, knowledge spillover, strategy, entry mode, network,
governance, upgrade, and performance. In addition, we have also found that, since 2007, a large amount of literature on the internationalization of clusters of emerging economies has begun to develop both qualitatively and quantitatively. Scholars have tried to use existing theories or develop new theories to explain the special phenomenon and new problems of the internationalization of emerging economy clusters, and used primary data, case analyses, and secondary data for empirical research.

Despite the growing interest in cluster internationalization, especially in the context of emerging economies, we recognize the need to shed more light on process-related and dynamic-related insights and more fine-grained theoretical development. Finally, we offered some major directions for future research, covering several significant topics ranging from endogenousness and the correlation of influencing factors and motivation, the multi-network collaboration mechanism, knowledge spillover differences between and within clusters, cluster heterogeneity, and performance asymmetries. At the same time, we also put forward some suggestions regarding the future research directions for the cluster internationalization of emerging economies, including the impact of cluster catch-up aspirations and catch-up capabilities, the “correct distance” between internationalization and localization, the identification of international competitive advantages and the compensation of competitive disadvantages, differences in internationalization paths, the combination and coordination of policy tools, local competition, and the organizational legitimacy and ecosystem performance of overseas clusters. In sum, the future of cluster internationalization research is significant and full of opportunities for academics, but requires a tremendous collective effort to realize these goals.

However, some limitations should be noted. On the one hand, our research has certain limitations, mainly related to the selection criteria for including only English articles in the WOS database. Therefore, we encourage further research, surveying of other databases, and consideration of non-English articles, especially the literature databases of countries with emerging economies. On the other hand, due to the limitation of the length of the article, we have not been able to expand and analyze all the contents in detail, especially for the internationalization of clusters in emerging economies. This article only discussed China as an example, and did not involve other similar clusters. In the future, we will conduct an in-depth study on the convenience and universality of the internationalization of the cluster of emerging economies.

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References
1. Porter, M.E. The Competitive Advantage of Nations; Free Press: New York, NY, USA, 1990.
2. Scott, A.J. Regional motors of the global economy. Futures 1996, 28, 391–411.
3. Schmitz, H. Collective efficiency and increasing returns. Camb. J. Econ. 1999, 23, 465–483.
4. Molina-Morales, F.X. European industrial districts: Influence of geographic concentration on performance of the firm. J. Int. Manag. 2001, 7, 277–294.
5. Guerrieri, P.; Pietrobelli, C. Industrial districts’ evolution and technological regimes: Italy and Taiwan. Technovation 2004, 24, 899–914.
6. Crestanello, P.; Tattara, G. Industrial Clusters and the Governance of the Global Value Chain: The Romania-Veneto Network in Footwear and Clothing. *Reg. Stud.* 2011, 45, 187–203.

7. Gammeltoft, P.; Barnard, H.; Madhok, A. Emerging Multinationals, Emerging Theory: Macro- and Micro-Level Perspectives. *J. Int. Manag.* 2010, 16, 95–101.

8. Parente, R.C.; Bruno Cyrino, A.; Spohr, N.; Carvalho de Vasconcelos, F. Lessons learned from Brazilian multinationals’ internationalization strategies. *Bus. Horiz.* 2013, 56, 453–463.

9. Marshall, A. *Principles of Economics*; MacMillan: London, UK, 1890.

10. Weber, A. *On the Location of Industries. Part I: Pure Location Theory*; Mohr Siebeck: Heidelberg, Germany, 1909.

11. Young, A. Increasing returns and economic progress. *Econ. J.* 1928, 38, 527–542.

12. Hoover, E.M. *An Introduction to Regional Economics*; Knopf: New York, NY, USA, 1970.

13. Krugman, P. Increasing returns and economic geography. *J. Political Econ.* 1991, 99, 483–499.

14. Porter, M.E. *On Competition*; Harvard Business School Press: Cambridge, MA, USA, 1998.

15. Porter, M.E. Clusters and the new economics of competition. *Harv. Bus. Rev.* 1998, 76, 77–90.

16. Bell, G.G. Clusters, Networks, and Firm Innovativeness. *Strateg. Manag. J.* 2005, 26, 287–295.

17. Cant, G.; Tambunan, T. Export-oriented small and medium industry clusters in Indonesia. *J. Enterprising Communities People Places Glob. Econ.* 2009, 3, 25–58.

18. Islankina, E. *Internationalization of Regional Clusters: Theoretical and Empirical Issues*; Higher School of Economics Research Paper No. WP BRP, 2015, 41. doi.org/10.2139/ssrn.2623532.

19. Götz, M.; Jankowska, B. Clusters and Industry 4.0–do they fit together? *Eur. Plan. Stud.* 2017, 25, 1633–1653.

20. Hou, M.Z. Study on the development mode of industrial cluster internationalization. *Bus. Res.* 2011, 02, 191–195.

21. Iurkov, V.; Benito, G.G. Domestic alliance networks and regional strategies of MNEs: A structural embeddedness perspective. *J. Int. Bus. Stud.* 2018, 49, 1033–1059.

22. Westhead, P.; Wright, M.; Ucbasaran, D. The internationalization of new and small firms: A resource-based view. *J. Bus. Ventur.* 2001, 16, 333–358.

23. Köcker, G.M.Z.; Müller, L.; Zombori, Z. *European Clusters Go International Networks and Clusters as Instruments for the Initiation of International Business Cooperation*; Institute for Innovation and Technology: Berlin, Germany, 2011.

24. Chapman, K.; MacKinnon, D.; Cumbers, A. Adjustment or renewal in regional clusters? A study of diversification amongst SMEs in the Aberdeen oil complex. *Trans. Inst. Br. Geogr.* 2004, 29, 382–396.

25. Fernhaber, S.A.; McDouggall-Covin, P.P. Venture capitalists as catalysts to new venture internationalization: The impact of their knowledge and reputation resources. *Entrep. Theory Pract.* 2009, 33, 277–295.

26. Kowalski, A.M.; Marcinkowski, A. Clusters versus cluster initiatives, with focus on the ICT sector in Poland. *Eur. Plan. Stud.* 2014, 22, 20–45.

27. Jankowska, B.; Główka, C. Clusters on the Road to Internationalization—Evidence from a CEE Economy. *Compet. Rev.* 2016, 26, 395–414.

28. Jankowska, B. Cluster organization as a pro-internationalization form of cooperation in the SME sector—a Polish case in the European context. *J. Econ. Manag.* 2015, 22, 54–74.

29. Delgado, M.; Porter, M.E.; Stern, S. Clusters, convergence, and economic performance. *Res. Policy* 2014, 43, 1785–1799.

30. Visser, E.-J.; Boschma, R. Learning in districts: Novelty and lock-in in a regional context. *Eur. Plan. Stud.* 2004, 12, 793–808.

31. Ketels, C.; Lindqvist, G.; Sölvell, Ö. Strengthening clusters and competitiveness in Europe. The Role of Cluster Organisations. *Clust. Obs.* 2012, 10, 1–56.

32. Islankina, E.; Thurner, T.W. Internationalization of cluster initiatives in Russia: Empirical evidence. *Entrep. Reg. Dev.* 2018, 30, 776–799.

33. Cooke, P. From clusters to platform policies in regional development. *Eur. Plan. Stud.* 2012, 20, 1415–1424.

34. Sölvell, O.; Lindqvist, G.; Ketels, C.; Porter, M.E. *The Cluster Initiative Greenbook*; Ivory Tower Publishers: Stockholm, Sweden, 2003.

35. Parrilli, M.D. Clusters and internationalization: The role of lead firms’ commitment and RIS proactivity in tackling the risk of internal fractures. *Eur. Plan. Stud.* 2019, 27, 2015–2033.

36. Bathelt, H.; Malmberg, A.; Maskell, P. Clusters and knowledge: Local buzz, global pipelines and the process of knowledge creation. *Prog. Hum. Geogr.* 2004, 28, 31–56.

37. Humphrey, J.; Schmitz, H. How does insertion in global value chains affect upgrading in industrial clusters? *Reg. Stud.* 2002, 36, 1017–1027.

38. Jaffe, A.B.; Trajtenberg, M.; Henderson, R. Geographic localization of knowledge spillovers as evidenced by patent citations. *Q. J. Econ.* 1993, 108, 577–598.

39. Head, K.; Ries, J.; Swenson, D. Agglomeration benefits and location choice: Evidence from Japanese manufacturing investments in the United States. *J. Int. Econ.* 1995, 38, 223–247.

40. Jacobs, J. *The Economy of Cities*. Vintage: New York, NY, USA, 1969.

41. Cui, L.; Meyer, K.E.; Hu, H.W. What drives firms’ intent to seek strategic assets by foreign direct investment? A study of emerging economy firms. *J. World Bus.* 2014, 49, 488–501.

42. Felzensztein, C.; Deans, K.R. Marketing practices in wine clusters: Insights from Chile. *J. Bus. Ind. Mark.* 2013, 28, 357–367.
43. Harvey, D. The geopolitics of capitalism. In Social Relations and Spatial Structures; Gregory, D., Urry, J. Eds.; Macmillan: London, UK, 1985, 128–163.
44. Meyer, K.E.; Mudambi, R.; Narula, R. Multinational Enterprises and Local Contexts: The Opportunities and Challenges of Multiple Embeddedness. J. Manag. Stud. 2011, 48, 235–252.
45. Hirschman, A.O. Essays in Trespassing: Economics to Politics and Beyond; Cambridge University Press: Cambridge, UK, 1981.
46. Mataloni, R.J. The structure of location choice for new U.S. manufacturing investments in Asia-Pacific. J. World Bus. 2011, 46, 154–165.
47. Bair, J.; Gereffi, G. Upgrading, uneven development, and jobs in the North American apparel industry. Glob. Netw. 2003, 3, 143–169.
48. Aris, A.; Shneidman, B.; Qazvinian, V.; Radev, D. Visual overviews for discovering key papers and influences across research fronts. J. Am. Soc. Inf. Sci. Technol. 2009, 60, 2219–2228.
49. Porter, M.E. Location, competition, and economic development: Local clusters in a global economy. Econ. Dev. Q. 2000, 14, 15–34.
50. Tang, X.Y.; Tang, X.Y. From government to market: Sustainable development path of overseas industrial parks. Foreign Aff. Rev. J. China 2019, 36, 5–6, 39–61.
51. Gordon, I.R.; McCann, P. Industrial Clusters: Complexes, Agglomeration and/or Social Networks? Urban. Stud. 2000, 37, 513–532.
52. Francioni, B.; Vissak, T.; Musso, F. Small Italian wine producers’ internationalization: The role of network relationships in the emergence of late starters. Int. Bus. Rev. 2017, 26, 12–22.
53. Dalmoro, M. The formation of country wineries networks for internationalization: An analysis of two new world wines regions. J. Wine Res. 2013, 24, 96–111.
54. Reiffenstein, T. Institutions, industrial upgrading, and economic performance in Japan: The ‘Flying Geese’ paradigm of catch-up growth. Pac. Aff. 2008, 81, 461–463.
55. Pietrobelli, C.; Staritz, C. Upgrading, Interactive Learning, and Innovation Systems in Value Chain Interventions. Eur. J. Dev. Res. 2018, 30, 557–574.
56. Giuliani, E. The selective nature of knowledge networks in clusters: Evidence from the wine industry. J. Econ. Geogr. 2007, 7, 139–168.
57. Valdaliso, J.; Elola, A.; Aranguren, M.; Lopez, S. Social capital, internationalization and absorptive capacity: The electronics and ICT cluster of the Basque Country. Entrep. Reg. Dev. 2011, 23, 707–733.
58. Kramer, S.M. International R&D spillovers in emerging markets: The impact of trade and foreign direct investment. J. Int. Trade Econ. Dev. 2010, 19, 591–623.
59. Giuliani, E.; Pietrobelli, C.; Rabellotti, R. Upgrading in global value chains: Lessons from Latin American clusters. World Dev. 2005, 33, 549–573.
60. Enright, M.J. Regional Clusters and Multinational Enterprises: Independence, Dependence, or Interdependence? Int. Stud. Manag. Organ. 2000, 30, 114–138.
61. Gereffi, G.; Humphrey, J.; Sturgeon, T. The governance of global value chains. Rev. Int. Political Econ. 2005, 12, 78–104.
62. Guerrieri Mudambi, R. Location, control and innovation in knowledge-intensive industries. J. Econ. Geogr. 2008, 8, 699–725.
63. Luo, Y.H.; Liu, T.M. Research on international governance capacity of industrial clusters. J. Hum. Univ. Finance. Econ. 2019, 35, 83–91.
64. Evans, P.; Pucik, V.; Barsoux, J.-L. The Global Challenge: Frameworks for Human Resource Management; McGraw Hill: Boston, MA: USA, 2002.
65. Dinges, N.G.; Baldwin, K.D. Intercultural competence: A research perspective. Handb. Intercult. Train. 1996, 2, 106–123.
66. Gertsen, M.C. Intercultural competence and expatriates. Int. J. Hum. Resour. Manag. 1990, 1, 341–362.
67. Johnson, J.P.; Lenartowicz, T.; Apud, S. Cross-cultural competence in international business: Toward a definition and a model. J. Int. Bus. Stud. 2006, 37, 525–543.
68. Bücker, J.; Poutsma, E. Global management competencies: A theoretical foundation. J. Manag. Psychol. 2010, 25, 829–844.
69. Bird, A.; Stevens, M.; Mendenhall, M.J.; Oddou, G. Defining the content domain of intercultural competence for global leaders. J. Manag. Psychol. 2010, 25, 810–828.
70. Andresen, M.; Bergdolt, F. A systematic literature review on the definitions of global mindset and cultural intelligence—merging two different research streams. Int. J. Hum. Resour. Manag. 2017, 28, 170–195.
71. Ang, S.; Van Dyne, L.; Koh, C.; Ng, K.Y.; Templer, K.J.; Tay, C. Cultural intelligence: Its measurement, effects on cultural judgement, decision-making, cultural adaptation, and task performance. Manag. Organ. Rev. 2007, 3, 335–371.
72. Earley, C.P.; Ang, S. Cultural Intelligence: Individual Interactions Across Cultures; Stanford University Press: Stanford, USA, 2003.
73. Ng, K.Y.; Earley, P.C. Culture+ intelligence: Old constructs, new frontiers. Group Organ. Manag. 2006, 31, 4–19.
74. Chua, R.Y.; Moris, M.W.; Mor, S. Collaborating across cultures: Cultural metacognition and affect-based trust in creative collaboration. Organ. Behav. Hum. Decis. Process. 2012, 118, 116–131.
75. Templer, K.J.; Tay, C.; Chandrasekar, N.A. Motivational cultural intelligence, realistic job preview, realistic living conditions preview, and cross-cultural adjustment. Group Organ. Manag. 2006, 31, 154–173.
76. Brislin, R.; Worthley, R.; Macnab, B. Cultural intelligence: Understanding behaviors that serve people’s goals. Group Organ. Manag. 2006, 31, 40–55.
77. Elenkov, D.S.; Manev, I.M. Senior expatriate leadership’s effects on innovation and the role of cultural intelligence. J. World Bus. 2009, 44, 357–369.
78. Lee, L.Y.; Sukoco, B.M. The effects of cultural intelligence on expatriate performance: The moderating effects of international experience. *Int. J. Hum. Resour. Manag.* **2010**, *21*, 963–981.
79. Magnusson, P.; Westöö, S.A.; Semenov, A.V.; Randrianasolo, A.A.; Zdravkovic, S. The role of cultural intelligence in marketing adaptation and export performance. *J. Int. Mark.* **2013**, *21*, 44–61.
80. Bücker, J.J.; Furrer, O.; Poutsma, E.; Buyens, D. The impact of cultural intelligence on communication effectiveness, job satisfaction, and anxiety for Chinese host country managers working for foreign multinationals. *Int. J. Hum. Resour. Manag.* **2014**, *25*, 2068–2087.
81. Wang, C.; Hong, J.; Kafouros, M.; & Boateng, A. What drives outward FDI of Chinese firms? Testing the explanatory power of three theoretical frameworks. *International business review*, **2012**, *21*, 425-438.
82. Fornahl, D.; Hassink, R.; Menzel, M. Broadening Our Knowledge on Cluster Evolution. *Eur. Plan. Stud.* **2015**, *23*, 1921–1931.
83. Li, P.F.; Bathelt, H.; Wang, J. Network dynamics and cluster evolution: changing trajectories of the aluminium extrusion industry in Dali, China. *J. Econ. Geogr.* **2012**, *12*, 127–155.
84. Malmberg, A.; and Maskell, P. The Elusive Concept of Localization Economies: Towards a Knowledge-based Theory of Spatial Clustering. *Environ. Plan. A*. **2002**, *34*, 429–449.
85. Giblin, M.; Ryan, P. Anchor incumbent and late entry MNEs as propellents of technology cluster evolution. *Ind. Innov.* **2015**, *22*, 553–574.
86. Yang, J.; Černevičiūtė, J. Cultural and Creative Industries (CCI) and sustainable development: China’s cultural industries clusters. *Entrep. Sustain. Issues* **2017**, *5*, 231–242.
87. Bassi, F.C.S. *From Science and Technological Parks to an Innovative and Sustainable Ecosystem: Cluster Approach in Life Sciences Sector and the Growth Through Complementarities*; Bioindustry Park Silvano Fumero: Canavesse, Italy, 2011.
88. Xie, X.M.; Wu, Y.H.; Ma, G.X. Driving forces of industrial clusters towards innovative clusters: Accelerating the innovation process. *Asian J. Technol. Innov.* **2016**, *24*, 161–178.
89. Dobse, D.; Fornahl, D.; Vehrke, J. Fostering place-based innovation and internationalization—the new turn in German technology policy. *Eur. Plan. Stud.* **2018**, *26*, 1137–1159.
90. Rauh, C. EU politicization and policy initiatives of the European Commission: The case of consumer policy. *J. Eur. Public Policy* **2019**, *26*, 344–365.
91. Scheller, D.; Thörm, H. Governing ‘sustainable urban development’ through self-build groups and co-housing: The cases of Hamburg and Gothenburg. *Int. J. Urban. Reg. Res.* **2018**, *42*, 914–933.
92. Raszkowski, A.; Bartniczak, B. Towards sustainable regional development: economy, society, environment, good governance based on the example of Polish regions. *Transform. Bus. Econ.* **2018**, *17*, 225–245.
93. Rocha, A.D.; Kury, B.; Tomassini, R.; Velloso, L. Strategic responses to environmental turbulence: A study of four Brazilian exporting clusters. *Investig. Reg. J. Reg. Res.* **2017**, *39*, 155–174.
94. Visser, E.-J.; De Langen, P. The importance and quality of governance in the Chilean wine industry. *Gefournal*. **2006**, *65*, 177.
95. Dulupçu, M.A.; Karakoz, M.; Sungur, O.; Unlu, H. Cluster (ing) policies in Turkey: The impact of internationalization or the imitation of internationals. *Entrep. Hum. Cap. Reg. Development*. **2015**, *31*, 239–262.
96. Malmberg Lorenzen, M.; Taeube, F.A. *Breakout from Bollywood? Internationalization of Indian Film Industry*; DRUID: Frederiksberg, Denmark, 2007.
97. Baldwin, R. *The Great Convergence*; Harvard University Press: Cambridge, MA, USA, 2016.
98. Graham, H. *The Spanish Civil War*. Oxford University Press: Oxford, UK, 2005.
99. Zheng, Y.J.; Liao, W.; Lin, W. Study on the correlation path between the internationalization mode of industrial cluster and its driving factors. *Sci. Technol. Prog. Countermeas.* **2017**, *231–242.
100. Smith, A.; Pickles, J.; Buček, M.; Pástor, R.; Begg, B. The political economy of global production networks: Regional industrial change and differential upgrading in the East European clothing industry. *J. Econ. Geogr.* **2014**, *14*, 1023–1051.
101. Urkina, E.; Van Assche, A. Global connectedness and local innovation in industrial clusters. *J. Int. Bus. Stud.* **2018**, *49*, 706–728.
102. Wu, D.D.; Xie, J.G. Effect on FDI on industrial cluster: An empirical study on the manufacturing in Jiangshu Province. *World Econ. Res.* **2007**, *6*, 54–61, 87–88.
103. Xu, X.P.; Sheng, Y. Are FDI spillovers regional? Firm-level evidence from China. *J. Asian Econ.* **2012**, *244–258.
104. Fu, X.D. Processing Trade, FDI and the Exports of Indigenous Firms: Firm-Level Evidence from Technology-Intensive Industries in China. *Oxf. Bull. Econ. Stat.* **2011**, *73*, 792–817.
105. Huggins, R.; Johnston, A. Knowledge flow and inter-firm networks: The influence of network resources, spatial proximity and firm size. *Entrep. Reg. Dev.* **2010**, *22*, 457–484.
106. Fatima, S.T. Globalization and technology adoption: Evidence from emerging economies. *J. Int. Trade Econ. Dev.* **2017**, *26*, 724–758.
107. Cuervo-Cazurra, A.; Genc, M. Transforming Disadvantages into Advantages: Developing-Country MNEs in the Least Developed Countries. *J. Int. Bus. Stud.* **2008**, *39*, 957–979.
112. Guillén, M. F. Experience, imitation, and the sequence of foreign entry: Wholly owned and joint-venture manufacturing by South Korean firms and business groups in China, 1987–1995. *Journal of International Business Studies*, 2003, 34, 185-198.
113. Shrank, A. Export processing zones: Free market islands or bridges to structural transformation? *Dev. Policy Rev.* 2001, 19, 230–233.
114. Lundvall, B.; Johnson, B.; Andersen, E.S.; Dalum, B. National systems of production, innovation and competence building. *Res. Policy*. 2002, 31, 213–231.
115. Zhang, E.Z. Building global value chain with “One Belt And One Road” as the starting point. *Xinhua Daily* 25 May 2017; p. 17.
116. Chen, Y.T.; Wu, Z.; Fan, Y.C.; Rong, K. International r & d research: connotation, framework and Chinese context. *Sci. Sci. Res.* 2017, 35, 387–395, 418.
117. Wang, D.; Feng, T.; Freeman, S.; Fan, D.; Zhu, C.J. Unpacking the “skill–cross-cultural competence” mechanisms: Empirical evidence from Chinese expatriate managers. *Int. Bus. Rev.* 2014, 23, 530–541.
118. Meyer, K.E.; Xin, K.R. Managing talent in emerging economy multinationals: Integrating strategic management and human resource management. *Int. J. Hum. Resour. Manag.* 2018, 29, 1827–1855.
119. Anderson, P.H. Regional clusters in a global world: Production relocation, innovation, and industrial decline. *Calif. Manag. Rev.* 2006, 49, 101–122.
120. Chen, Y.T.; Li, J.; Cheng, C.; Rong, K. Legitimizing EMNEs’ Innovation Ecosystems Overseas: Evidence from an Industrial Park under the Belt & Road Initiative. *Manag. World*. 2021, 37, 161–180.
121. Dib, L.A.; Rocha, A.D.; Silva, J.F.D. The internationalization process of Brazilian software firms and the born global phenomenon: Examining firm, network, and entrepreneur variables. *J. Int. Entrep.* 2010, 8, 233–253.
122. Ma, X.; Song, C.Y. China-Egypt Suez economic and trade cooperation zone: a new oasis on the “One Belt and One Road”. *West Afr.* 2016, 2, 116–118.
123. Tan, D.; Meyer, K.E. Country-of-origin and industry FDI agglomeration of foreign investors in an emerging economy. *J. Int. Bus. Stud.* 2011, 42, 504–520.
124. Masiero, M.M.; Landers, A.L.; Kerley, M.S. 371 Rumen protein degradation characteristics among six protein feed sources using a batch culture system. *J. Anim. Sci.* 2017, 95, 180.