

Systematic Literature Review in Reshoring Strategies 4.0

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Abstract: *Background:* With global changes in markets and government regulations, most organizations, which previously opted for offshore production, began to return to their country of origin—a process called reshoring. The new strategies for locating units and business models, which involve decisions to outsource production and organizational capacity, now face a new context of Industry 4.0, a market for technologies with the potential to transform entire supply chains in addition to directly influencing organizational aspects with innovative solutions and resource efficiency. *Methods:* This systematic literature review (SLR) found 43 articles relating to reshoring and Industry 4.0; there was an increase in publications in the last few years. We divided the studies according to 9 aspects: market uncertainties and labor supply; support for managerial decision making; competitive priorities analysis (costs and efficiency); business strategies; information knowledge and collaboration management; political, social and economic changes; risk security and privacy management; supply chain management; and investment market and private equity funds. *Results:* This article presents a content analysis of articles in the field of administration, focusing on location strategies, technology adoption, and organizational changes. The study identifies key aspects such as research quality, publication trends, regional focus, and strategy topics. The findings emphasize the importance of research objectives and problem-solving for managerial decision-making and highlight the need for further exploration in the literature. *Conclusions:* Reshoring, Industry 4.0, and location strategies are relevant topics for global management. The supply chain plays a role in decision-making for location and technology adoption, suggesting the need for more research in supply chain management.

Keywords: location strategy; Industry 4.0; systematic literature review; reshoring; relocation; i40; offshoring



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1. Introduction

Seeking low costs and advantages through a cheap and available workforce, better government policies, and interesting resources, some companies that once produced in developed countries began to internationalize their industrial production, transferring it partially or completely to developing countries. This movement is known as offshoring. However, a new global movement emerged, and companies are now returning to their countries of origin for their activities and production units due to several factors, such as changes in regulations, major economic differences between countries, instability in the exchange rate, and greater competitiveness for scarce resources [1].

In a global scenario, the return of the entirety or part of production to the original country involves factors of outsourcing and make-or-buy decisions. The supply resumption decisions and reevaluation of resources' locations can lead to inadequate quality of the delivered products, theft of intellectual property, growth opportunities, the brand value, the approach to the final consumer, and other issues [2]. In turn, strategic decisions regarding resources and organizational units are involved in the relationship between supply chain

management's scope and the decision-making studies on the locations of production units. Finally, location decisions or even resource allocations have a close relationship with inventory and production issues [3]. This movement, known as reshoring, represents a planning and reorganization of the productive and distributive units of supply chains. This process faces challenges, such as the tendency to increase costs; therefore, despite its importance for the global context, the topic is still poorly studied [1,2].

There are three attributes that make reshoring an even more complex process: the geographical or physical distance, which makes it difficult to measure and control the business; cultural distance because of regional and historical differences in the countries involved; and the dispersion distance, aggravated by the management of multiple locations in multinational companies [4]. In addition, sustainability is a critical factor of success for the business together with cost and profit evaluation decisions and potential risk sites, which includes mathematical solutions [5]. The literature on outsourcing also shows the complexity of controlling and coordinating costs [4].

The current industrial context changes the business models and internal operation strategies, so network partners create new markets with value proposals based on the immersion of new technologies: Industry 4.0 [6]. Known as the fourth industrial revolution, the benefits of new technologies have become the subject of many studies, both on their technical efficiency and in relation to organizational issues, including their ability to transform supply chains [7].

Despite the importance of new technologies for management, most studies are of a technical nature, with a lack of work on management support for the implementation of the technologies, that is, valid business models and strategies that precede the choice of the most appropriate technologies and their expected results [7]. A new research agenda suggests studies on logistics that involve organizational restructuring, role changes, reverse logistics, and resource efficiency in traditional models [8].

Therefore, there is a demand for research that relates to risk management and on-demand solutions, in addition to the regional and national context regarding the stimulus and incentives to digitize and influence sectors and the sizes of companies [6]. Regarding the resilience of supply chains, certain themes, such as the role of human resources and technology, need to be further explored in order to fully understand and promote resilient supply chains [9]. These aspects warrant deeper investigation to uncover their potential impacts and to identify strategies for fostering resilience within supply chain management. In South America, there is great interest in the available resources, but an increase in the future perception of risks of disruption to the supply chain [1].

Given this context, it has become essential that enterprises and multinational companies identify the main factors in the reshoring process and how the new technologies can favor their strategies. The objective of this research is summarized by characterizing the literature on location strategies and the reshoring movement in the context of Industry 4.0.

To better understand the reshoring movement, an SLR (systematic literature review) was conducted in order to comprehend the academic production related to the topic and to thoroughly identify and integrate research that is relevant, employing structured, transparent, and reproducible methodologies at each stage of the process.

Industry 4.0 is defined as a set of highly integrated smart factories, where individual products are made sustainably in a mass production format, meeting the demands of the globalized market [8]. Germany was the pioneer and has responsibilities regarding its regional productive sectors, as well as other global sectors, such as those involved with implementation and technological development through support and solutions in the field of information technology. This transformation will occur gradually with the integration of current technologies, the commitment of technological and informational industries, and new regulations and international standards [10].

Industrial revolutions have been marked by changes in the methods of producing, relating, and creating value. Since the advent of mechanization of production, the use of electrical energy; electronics; and, more recently, the internet of things, cloud computing,

mining, etc., has increased [7]. Again, with Industry 4.0, there will be changes in the ways of producing, relating, and creating value, that is, there will be changes in the methods of negotiating and in information systems through integration between areas, economic sectors, industries, and productive and value chains. In addition, it transforms and creates models and designs of information systems [11]. Amid the challenges of the new industry, companies must adapt and innovate in their products, processes, and distribution to generate value and speed for production chains [12].

Industry 4.0 trends include disruptive technologies, customized mass production, and human and environmental integration into industrial systems [8]. Industry 4.0 also provides opportunities for enhancing food logistics through the adoption of Industry 4.0 technologies. These technologies offer the potential to decrease costs and time while simultaneously ensuring the quality of food products throughout their transportation within the supply chain [13].

A study of stable companies and startups revealed different purposes for the use of technology: the tendency to focus on services or products, the use of market platforms or ecosystems, and the establishment of support for businesses and new products. All of these requirements are aimed toward supply chain innovation and the generation of value for the final consumer, as well as the creation of more effective relationship networks [6].

The constant global changes demand new strategies and business models, as well as quick decision making, in business administration. Contributions to the literature involve adding new theories and methods that are appropriate for these changes and updating researchers in the areas related to the theme for future research agendas. Ref. [6] proposes this relationship between the resources and units' allocation decisions (represented by the reshoring movement) and supply chain management in a new context, in the scope of organizational capacity, which includes technological resources, equipment, and machinery.

The decision-making process in resource management and production units is still a poorly studied and nonconformity topic [2]. As an example, the authors of [1] studied the American market and pointed out the political changes resulting from the outcome of the elections in the United States as well as their regulations over time as influential factors in the attractiveness of the market, such as the "Bring Jobs Back to America" campaign [1]. As of 2010, the new American incentives to contain the number of employees in these industries and to reduce external technological dependence influenced the movement of production back to the United States, in addition to local development and increased exports in the country [9].

Managers also pointed out issues that became more important during a three-year period: supply chain management and objectives related to cost reduction [1]. To obtain lower costs and more highly profitable results, companies seek the gradual implementation of 4.0 technologies and need for periods of maturity and organizational competence [7].

This research analyzed 43 papers relating to reshoring and Industry 4.0. It was observed that there was a growth in publications, especially in nine aspects: market uncertainties and labor supply; support for managerial decision making; competitive priorities analysis (costs and efficiency); business strategies; information knowledge and collaboration management; political, social, and economic changes; risk security and privacy management; supply chain management; and investment market and private equity funds.

So far, the main authors who have raised the topic of this research and demonstrated its relevance for future academic studies have been presented. The structure of the text below follows a systematic literature review (SLR) format, and is presented in stages. Finally, a content analysis of the main articles is summarized and conclusions were drawn, considering suggestions for future research.

2. Materials and Methods

In order to identify the relationship between location strategies and new technologies in Industry 4.0 in the literature, a systematic literature review was carried out through

planning, conducting and reporting research, guided by [14], a study which emphasized the need for the administration field to bring theory (researchers) and organizational practice (managers) closer together.

2.1. Planning

The identification of the research needs was carried out through the reading of classic articles from Industry 4.0 and from location decision making, presented in the introduction section. A panel was created with the most recent main theorists who have had the greatest impact in the area, with their respective keywords, results found, published magazines, and suggestions for future research. Among the main articles, systematic reviews were found in two researched themes. On the other hand, no articles were found that conducted an SLR relating the themes to one another. Thus, this research seeks to answer the following question: What is the relationship between the relocation strategies, together with the reshoring movement, in the context of Industry 4.0?

After reading the main articles, the keywords presented in Table 1 were obtained. All keywords were used in conjunction with the two themes (that is, keywords relating to location decision together with keywords relating to Industry 4.0). The search procedure for the keywords was performed between 30 January 2020 and 8 February 2020 using the Web of Science, Scopus, Ebsco, and Science Direct databases, accessed through StArt Software, for data selection, extraction, and analysis. The analysis period lasted from 2010 to 2020, until the month of the search procedure, which was identified by [10] as the beginning of the American reshoring movement. The research protocol used inclusion and exclusion criteria which had been previously studied and were based on the literature, which included only articles with text entirely in English and having been published in magazines or newspapers. Technical and unrelated articles were later excluded from the discussion.

Table 1. Keywords for SLR.

Location Strategies	Industry 4.0
Location decision (OR)	Industry 4.0 (OR)
Outsourcing (OR)	Internet of Things (AND) IOT (OR)
Offshoring (OR)	Big Data (OR)
Reshoring (OR)	Cyber Physical System (OR)
Relocation	Digitalization (OR)

Source: prepared by the authors.

2.2. Conducting

The first search found 1048 documents, of which 757 came from the Scopus database, 205 came from Science Direct, and 87 came from Ebsco. Of these, 327 were duplicate documents, resulting in 722 unique documents. The first selection criterion was the exclusion of conference documents (295), book chapters or errata (15), editorials (3), and notes (1), resulting in 408 unique articles for later extraction by subject, as shown in Figure 1.

The software presented the main keywords of the first selection, according to Table 2. Conference and other documents were removed, as were any duplicate documents. The other keywords not shown in Table 2 revealed frequencies lower than two, considered less relevant to the combination of the two themes, despite contributing to the selection and extraction of articles.

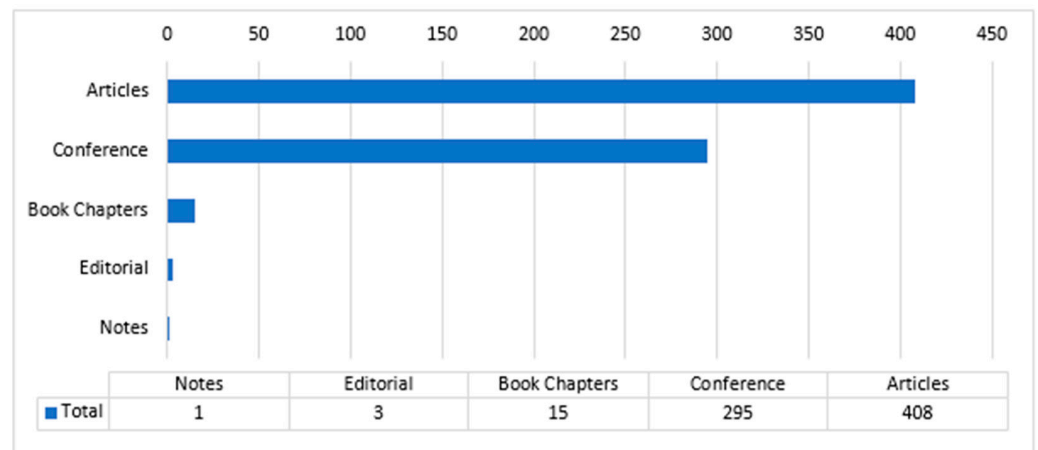


Figure 1. Types of documents found.

Table 2. Frequency of the keyword by number of articles.

Keyword	Frequency
Cloud Computing	12
Cloud Storage	6
Internet Of Things	6
Fog Computing	4
Industry 4.0	4
Security	4
Big Data	3
Internet Of Things (Iot)	3
Offshoring	3
Privacy	3
Relocation	3

Source: prepared by the authors.

Table 3 presents the main authors identified by the software through the snowballing technique. This technique surveys the main articles for the related topics in the database and shows the frequency of citation. Main authors who only presented articles as co-authors were excluded from the table, since it was not possible to find them through the search using the software. Only one author studied only one theme in his articles during the analyzed period. The theme in Table 3 was analyzed through the title presented, and was used only to present the result of the technique in a generalized way at the beginning of the research.

Table 3. Most often cited authors and respective topics covered.

Main Authors	Frequency	THEME
Mauro, C.	13	BOTH
Kinkel, S.	11	BOTH
Bals, L.	7	LOCATION DECISION
Fratocchi, L.	6	BOTH
Ancarani, A.	6	BOTH
Stentoft, J.	6	BOTH
Willcocks, L.	5	BOTH
Zhang, Y.	5	BOTH
Wang, C.	5	BOTH
Smorodinskaya, N.V.	5	BOTH

Source: prepared by the authors.

In the extraction stage, seven more duplicate articles were found, leaving 401 articles from which to extract the subject, then to either include or reject. The articles were rejected

in the pre-analysis for main reason of being technical articles that present the features of new technologies and their potential for specific results in medical areas, engineering projects, and recognition of geographical characteristics. Other reasons for exclusion were not addressing the two themes together and not having access to the full article in English. In total, 358 articles were excluded, totaling 43 articles extracted and accepted, as shown in Figure 2.

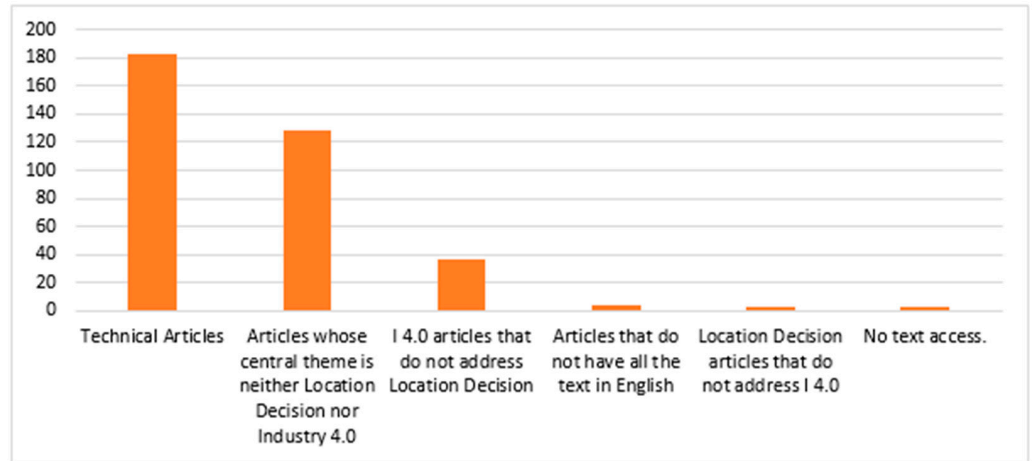


Figure 2. Articles that were extracted, but rejected.

Most articles accepted for analysis presented Industry 4.0 technologies as the main theme and addressed questions about location decisions, such as reshoring, outsourcing, and offshoring, among others. This reveals the importance of the new industry as a contribution to academic studies, which comprise a large number of technical articles. Many articles also discussed market uncertainties, demographic changes, and the regionality factor in the organizational context of technological changes in the new industry. Only four articles had the objective to relate the two themes, and these presented the reshoring movement. Only two authors had more than one publication with this theme: Ancarani A. and Di Mauro C. These articles were also found through the snowballing technique at the beginning of the research, as shown in Figure 3.

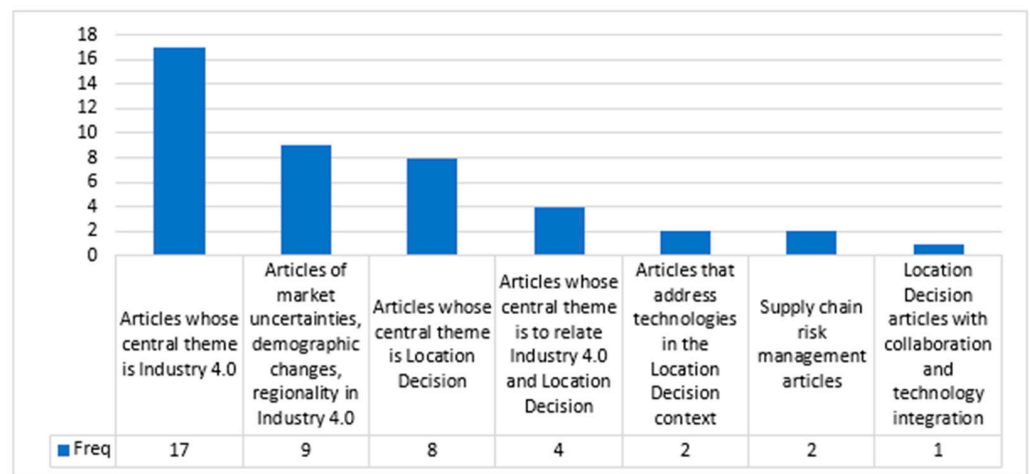


Figure 3. Articles that were extracted and accepted.

In the upcoming section, we will delve into the findings of the research and engage in detailed discussions regarding them. Subsequently, we will present the comprehensive conclusions derived from this study.

3. Results and Discussion

Through a content analysis of the selected articles, five types of classifications were made: context of the objective or strand, type of strategy related to location, type of strategy or decision related to the use of technology, integration factors between strategies, and scope level of the research. In addition, the articles were classified according to methodology, approach, country of operation, and internal areas of the study field.

Focusing on the research objective and research question is of paramount importance in judging the quality of the study in administration, as suggested by [14]. The quality of the study was judged according to its contribution to managerial decision making at the organizational, supply chain, and global levels, which involve the political, economic, and market contexts. A quality study covers and accompanies the new revolution and its development for the purpose of decision making in each context of transformation and globalization.

The research does not cover all of the possible contexts and factors, technologies, and strategies; thus, this is a field of study to be further explored in the literature. Thus, the strategy used was related to location (in English and related to the keywords of reshoring, offshoring, outsourcing, and insourcing); which technology was adopted or developed (related to the keywords of big data, cloud computing, internet of things, and other technologies (4.0)); and what the studies' contexts were (organizational, supply chain, or global changes).

The articles were also analyzed for objectives or aspects, approaches (quantitative or qualitative), and methodologies (theoretical articles, surveys, case studies, among others). At the end of the classification, six more articles considered to be technical were discarded, as this was not identified using the second criterion, resulting in 37 articles for discussion, as shown in Table 4.

Table 4. List of articles found in the literature.

Article Number	Author	Title	Data Base	Newspaper
1	[15]	Corporate social responsibility as new challenge for the IT industry.	Science Direct	Computer Law and Security Review
2	[16]	Big Data Management Challenges in a Meteorological Organization.	Scopus	International Journal of E-Adoption
3	[17]	The Apple business model: Crowdsourcing mobile applications.	Science Direct	Accounting Forum
4	[18]	Digitisation, Big Data and the transformation of accounting information.	Scopus	Accounting and Business Research
5	[19]	Cloud Requirements for Facilitating Business Collaboration: A Modeling Perspective.	Scopus	Journal of Organizational Computing and Electronic Commerce
6	[20]	Selection of the basic lean tools for development of Croatian model of innovative smart enterprise.	Scopus	Tehnicki Vjesnik
7	[21]	A socio-economic context of the "Fourth Industrial Revolution".	Ebsco	Education and Science without borders
8	[22]	Big data analytics for mitigating carbon emissions in smart cities: opportunities and challenges.	Scopus	European Planning Studies
9	[23]	Design an intelligent real-time operation planning system in distributed manufacturing network.	Scopus	Industrial Management and Data Systems
10	[24]	Service outsourcing and labor mobility in a digital age: transnational linkages between Japan and Dalian, China.	Scopus	Global Networks
11	[25]	Leveraging collective intelligence: How to design and manage crowd-based business models.	Science Direct	Business Horizons
12	[26]	Research on the third party logistics system and economic performance optimization based on big data analysis.	Scopus	Technical Bulletin
13	[27]	Models and practice of retail location on the Romanian market.	Scopus	Amfiteatru Economic
14	[28]	Big Data Analytics: The New Boundaries of Retail Location Decision Making.	Scopus	Papers in Applied Geography
15	[29]	The future of Chinese manufacturing: Employment and labor challenges. Chapter Eight—Conclusion: Reflection.	Science Direct	The Future of Chinese Manufacturing
16	[30]	Building Information Modeling (BIM) outsourcing among general contractors.	Science Direct	Automation in Construction
17	[31]	Reshoring and Industry 4.0: How often do they go together?	Scopus	IEEE Engineering Management Review
18	[32]	What do we know about manufacturing reshoring?	Scopus	Journal of Global Operations and Strategic Sourcing
19	[33]	Impact of disruptive technologies on sourcing and outsourcing transactions.	Science Direct	Computer Law & Security Review

Table 4. Cont.

Article Number	Author	Title	Data Base	Newspaper
20	[34]	Innovation and effect evaluation model of education and training outsourcing of state-owned enterprises under big data.	Scopus	Kuram ve Uygulamada Egitim Bilimleri
21	[35]	Hidden cost drivers in it outsourcing projects.	Scopus	Jusletter IT
22	[36]	Reshoring and additive manufacturing.	Scopus	World Review of Intermodal Transportation Research
23	[37]	Characteristics of venture capital investing in a climate of the digitalization of the Russian economy.	Scopus	International Journal of Civil Engineering and Technology
24	[38]	Industry 4.0 and the need for talent: a multiple casestudy of Taiwan’s companies.	Scopus	International Journal of Product Development
25	[39]	Backshoring strategy and the adoption of Industry 4.0: Evidence from Europe.	Science Direct	Journal of World Business
26	[40]	The “Right to Be Forgotten”: Negotiating Public and Private Ordering in the European Union.	Scopus	Business and Society
27	[41]	Bringing it all back home? Backshoring of manufacturing activities and the adoption of Industry 4.0 technologies.	Science Direct	Journal of World Business
28	[42]	Philippine readiness for the 4th industrial revolution: A case study.	Scopus	Asia-Pacific Social Science Review
29	[43]	Supplier selection problem in IoT solutions.	Scopus	International Journal of Pervasive Computing and Communications
30	[44]	Evolving profiles of financial risk management in the era of digitization: The tomorrow that began in the past.	Scopus	Journal of Public Affairs
31	[45]	What does it take to make the most of supplier relationships?	Scopus	Industrial Marketing Management
32	[46]	Translation 4.0-Evolution, Revolution, Innovation or Disruption?	Scopus	Lebende Sprachen
33	[47]	Implementation of Industry 4.0 concept in companies: empirical evidences.	Scopus	International Journal of Computer Integrated Manufacturing
34	[48]	E-Business and e-Commerce.	Science Direct	IEEE Engineering Management Review
35	[49]	Chapter 5—European productivity in the digital age: evidence from EU KLEMS	Science Direct	Measuring Economic Growth and Productivity
36	[50]	Performance measurement of India-based third party logistics sector: an empirical study of user versus provider perspectives.	Scopus	Production Planning and Control
37	[51]	Research on horizontal system model for food factories: A case study of process cheese manufacturer.	Science Direct	International Journal of Production Economics

Source: prepared by the authors.

The articles’ publication newspapers were diversified, with only the first three newspapers having two publications in the areas of the Journal of World Business, Computer law and Security Review, and IEEE Engineering Management Review, as shown in Figure 4.

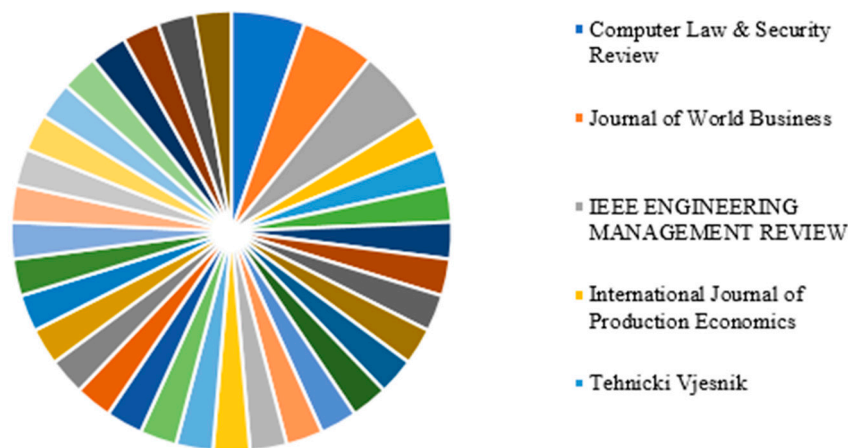


Figure 4. Published journals.

There was an increase in articles involving the themes during the last 3 years of the analyzed period. In the years 2010, 2011, and 2015, no articles were found, as shown in Figure 5. The growth pattern suggests a recent theme, for which the impacts of new technologies and global changes affect organizational strategies. Relevance for management draws the attention of researchers. Most of the articles analyzed companies or professionals from the European continent: 12 articles, 4 of which studied Europe together with America, which leaves 2 articles that exclusively addressed the European continent. Asia was the subject of 8 articles and Oceania 1 article. The other presented articles involved emerging countries (1 survey) or did not present any location specifically (13 articles).

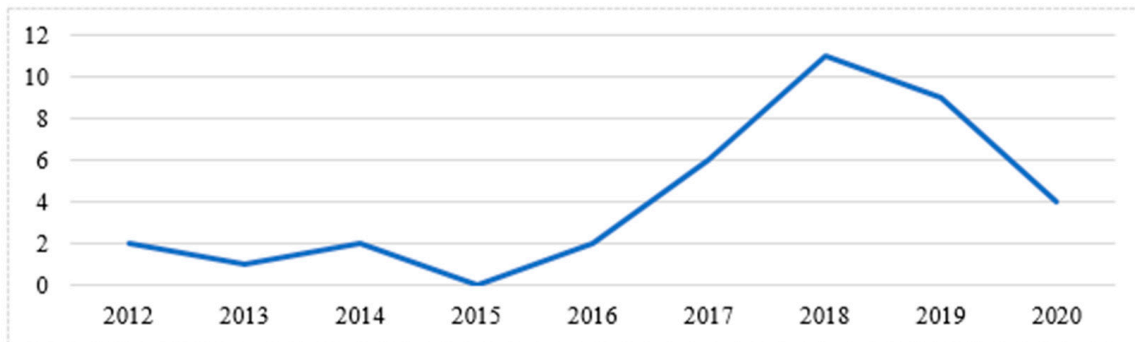


Figure 5. Year of publication of the articles.

The content analysis was carried out by dividing the articles based on a study of the content, and then they were grouped into global changes, changes in the supply chain, and changes in organizations. The analysis was also conducted with the factors of integration and collaboration between technologies and decision making of organizations, which were found in the classic articles and adapted to the priority subjects of the articles. These were support for managerial decision making; analysis of competitive priorities (cost and efficiency); business strategies; information management knowledge, and collaboration; political, social, and economic changes; risk management; security and privacy; supply chain management; and investment markets and private equity funds. Figure 6 shows the number of articles in each category.

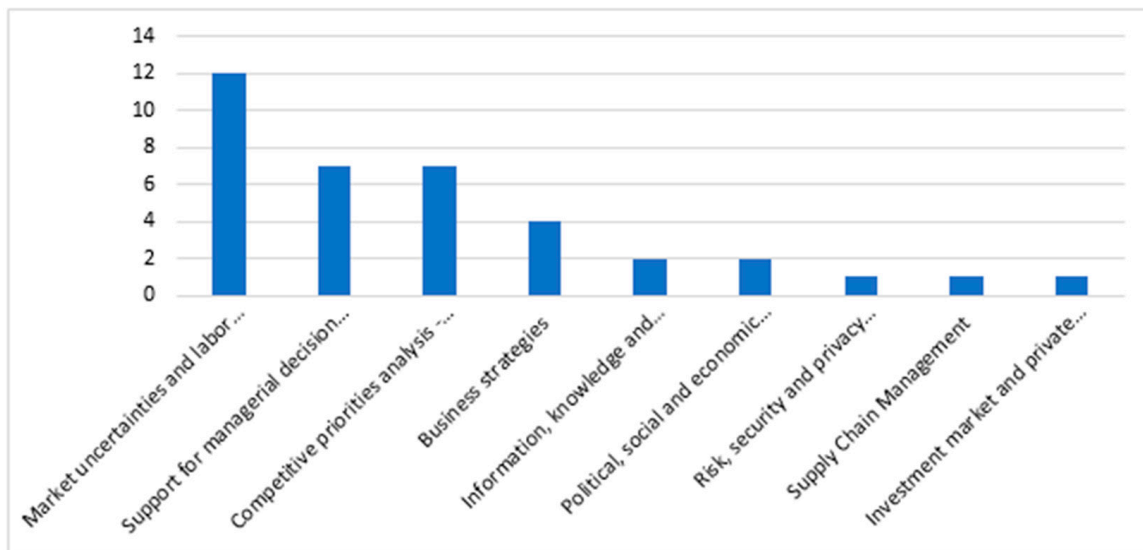


Figure 6. Number of articles focusing on each aspect of the study.

The review found articles that converged in terms of some main aspects, these being, in decreasing order of the number of articles: market uncertainties and labor supply; support for managerial decision making; competitive priorities analysis (costs and efficiency); business strategies; information knowledge and collaboration management; political, social, and economic changes; risk security and privacy management; supply chain management; and investment market and private equity funds.

The strategies analyzed in the articles are shown in Tables 5 and 6 and refer to the main topics addressed within each subject, or, in other words, the main strategy studied by each revised survey regarding the location-related decision making and specific technologies used for this purpose. As for the production property strategies, only three articles dealt with both subjects—offshoring and outsourcing—while most of the articles dealt with

make-or-buy decisions. It is possible to see the relevance of the reshoring movement, as it represented almost a fifth of the articles on location strategies in the context of the new industry. Regarding the strategies for using technologies, most addressed the adoption of new technologies, without specifying or focusing on a specific technology.

Table 5. Strategies used regarding the location decision.

	Qty.	%
Outsourcing, insourcing, or crowdsourcing	21	57
Reshoring or backshoring	7	19
Chain redesign and resource allocations	6	16
Offshoring and outsourcing	3	8
Total	37	100

Source: prepared by the authors.

Table 6. Strategies regarding the use of 4.0 technologies.

	Qty.	%
Adoption of new technologies	17	46
Adoption and development of big data approaches	9	40
Development of approaches in IOT	2	
Adoption and development of BIM approaches	1	
Development of cellular application approaches	1	
Cloud storage capacity development.	1	
Development of RFID technology	1	
Not specifically addressed	5	14
Total	37	100

Source: prepared by the authors.

The scope of the research reveals studies with organizational scopes, that is, investigating ways to gradually adopt new technologies and assessing the decision-making regarding organizational resources, while global changes have also had significant importance for academic studies, as shown in Table 7. Regarding the methodologies of the articles, was found a distribution of more qualitative approaches, while the literature presented more empirical (22 articles) than theoretical (15 articles) research. The main areas of activity of the field studies were information technology (four articles) and managers and decision makers (two articles), as shown in Table 8.

Table 7. Scope of the survey.

	Qty.	%
Organizational	17	46
Global	15	40
Supply chain	5	14
Total	37	100

Source: prepared by the authors.

Table 8. Methodologies and approaches to articles.

	Qty.
Systematic/theoretical/documentary review	13
Documentary/secondary data	7
Survey	6
Simulation/models	5
Case Study or multiple methods	4
Focus group	2
Qualitative	22
Quantitative	11
Both	4
Total	37

Source: prepared by the authors.

4. Discussion and Implication

The literature focusing on global supply chains and facility locations raises discussion about several concepts and situations related to different types of reshoring processes (e.g., [1]). Studies involving decision-making regarding resources and organizational units are closely related to the field of supply chain management [3]. Finally, location decisions and even resource allocations have a close relationship with inventory and production issues [3]. The dispersion distance is aggravated by the management of multiple locations in multinational companies [4]. The theoretical concepts related to the reshoring processes demonstrate the challenges, such as the tendency for costs to be increased; therefore, despite its importance in the global context, the topic is still poorly studied [1,2].

This paper provides an analysis of the regional and global scenario of the reshoring concept. The bibliographic database revealed that the studies on organizational capacity in terms of technology essentially aimed to provide better strategies regarding the allocation of large amounts of resources and investments in structures and competences. Another relevant finding revealed that the reshoring movement also represents the management of intellectual, technological, and material property through outsourcing decisions and returning to production, which also require major changes in business and in the movement of resources.

The literature trend is moving towards a research agenda that deals not only with the technical and functional approaches to technology, but also with the organizational level and the impacts and relationships between technology and managerial decision making. While the reshoring movement is studied in greater depth in the context of Industry 4.0, new technologies become useful tools to be developed in monitoring, both practically and theoretically, of managerial support for decision making regarding structural and procedural changes.

5. Conclusions, Limitations, and Future Research Avenues

The present research involved a systematic literature review on the relocation movement, specifically focusing on reshoring and Industry 4.0. For this purpose, 43 articles were studied, and as a result, a growth in publications was observed, particularly regarding nine aspects: market uncertainties and labor supply; support for managerial decision making; competitive priorities analysis (costs and efficiency); business strategies; information knowledge and collaboration management; political, social and economic changes; risk security and privacy management; supply chain management; and investment market and private equity funds.

Location strategies, in terms of the reshoring movement and other strategies addressed herein, and Industry 4.0 are recent and relevant topics for the global and managerial context, which includes supply chains and organizations. Despite not being the focus of the studies, the supply chain has a relationship with decision making regarding the location and adoption of new technologies (4.0) because of the need for structural changes, allocation of and investment in resources, and a redesign of the entire production chain and its processes. The main authors of each study also cited the supply chain. It is suggested that researchers delve deeper into supply chain management in order to understand both issues, either jointly or in isolation.

Studies in this area are recent and growing, requiring further research on the theme of theoretical construction and future, more ground-based research. The growth in the number of articles shows the development of both of these topics separately, which are recent in the literature, and of the themes together, which reveals the problems regarding the context: uncertainties regarding the market, competitiveness, changes in the labor supply, and changes in policies. Studies on global, national, and regional scenarios are necessary in order to understand new organizational strategies.

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References

1. Ellram, L.M.; Tate, W.L.; Petersen, K.J. Offshoring and reshoring: An update on the manufacturing location decision. *J. Supply Chain Manag.* **2013**, *49*, 14–22. [[CrossRef](#)]
2. Wiesmann, B.; Snoei, J.R.; Hilletofth, P.; Eriksson, D. Drivers and barriers to reshoring: A literature review on offshoring in reverse. *Eur. Bus. Rev.* **2017**, *29*, 15–42. [[CrossRef](#)]
3. Melo, M.T.; Nickel, S.; Gama, F.S. Facility location and supply chain management—A review. *Eur. J. Oper. Res.* **2009**, *196*, 401–412. [[CrossRef](#)]
4. Handley, S.M.; Benton, W.C., Jr. The influence of task-and location-specific complexity on the control and coordination costs in global outsourcing relationships. *J. Oper. Manag.* **2013**, *31*, 109–128. [[CrossRef](#)]
5. Chen, L.; Olhager, J.; Tang, O. Manufacturing facility location and sustainability: A literature review and research agenda. *Int. J. Prod. Econ.* **2014**, *149*, 154–163. [[CrossRef](#)]
6. Hahn, G.J. Industry 4.0: A supply chain innovation perspective. *Int. J. Prod. Res.* **2020**, *58*, 1425–1441. [[CrossRef](#)]
7. Frederico, G.F.; Garza-Reyes, J.A.; Anosike, A.; Kumar, V. Supply Chain 4.0: Concepts, maturity and research agenda. *Supply Chain Manag. Int. J.* **2019**, *25*, 262–282. [[CrossRef](#)]
8. Winkelhaus, S.; Grosse, E.H. Logistics 4.0: A systematic review towards a new logistics system. *Int. J. Prod. Res.* **2020**, *58*, 18–43. [[CrossRef](#)]
9. Faggioni, F.; Rossi, M.V.; Sestino, A. Supply Chain Resilience in the Pharmaceutical Industry: A Qualitative Analysis from Scholarly and Managerial Perspectives. *Int. J. Bus. Manag.* **2023**, *18*, 129. [[CrossRef](#)]
10. Kagermann, H.; Helbig, J.; Hellinger, A.; Wahlster, W. *Recommendations for Implementing the Strategic Initiative INDUSTRIE 4.0: Securing the Future of German Manufacturing Industry*; Final Report of the Industrie 4.0 Working Group; Forschungsunion: Berlin, Germany, 2013; pp. 1–84.
11. Lasi, H.; Fettke, P.; Kemper, H.G.; Feld, T.; Hoffmann, M. Industry 4.0. *Bus. Inf. Syst. Eng.* **2014**, *6*, 239–242. [[CrossRef](#)]
12. Erol, S.; Schumacher, A.; Sihni, W. Strategic guidance towards Industry 4.0—a three-stage process model. *Int. Conf. Compet. Manuf.* **2016**, *9*, 495–501.
13. Jagtap, S.; Bader, F.; Garcia-Garcia, G.; Trollman, H.; Fadji, T.; Salonitis, K. Food logistics 4.0: Opportunities and challenges. *Logistics* **2020**, *5*, 2. [[CrossRef](#)]
14. Tranfield, D.; Denyer, D.; Smart, P. Towards a methodology for developing evidence-informed management knowledge by means of systematic review. *Br. J. Manag.* **2003**, *14*, 207–222. [[CrossRef](#)]
15. Weber, R.H. Corporate social responsibility as new challenge for the IT industry. *Comput. Law Secur. Rev.* **2012**, *28*, 634–640. [[CrossRef](#)]
16. Wilson, L.; Goh, T.T.; Wang, W.Y.C. Big Data Management Challenges in a Meteorological Organisation. *Int. J. E-Adopt.* **2012**, *4*, 1–14. [[CrossRef](#)]
17. Bergvall-Kåreborn, B.; Howcroft, D. The Apple business model: Crowdsourcing mobile applications. *Account. Forum* **2013**, *37*, 280–289. [[CrossRef](#)]
18. Bhimani, A.; Willcocks, L. Digitisation, ‘Big Data’ and the transformation of accounting information. *Account. Bus. Res.* **2014**, *44*, 469–490. [[CrossRef](#)]
19. Hawryszkiewicz, I.T. Cloud requirements for facilitating business collaboration: A modeling perspective. *J. Organ. Comput. Electron. Commer.* **2014**, *24*, 174–185. [[CrossRef](#)]
20. Veza, I.; Mladineo, M.; Gjeldum, N. Selection of the basic lean tools for development of croatian model of innovative smart enterprise. *Teh. Vjesn.* **2016**, *23*, 1317–1324.
21. Kroh, M. A socio-economic context of the “fourth industrial revolution. *Educ. Sci. Without Bord.* **2016**, *7*, 10.
22. Giest, S. Big data analytics for mitigating carbon emissions in smart cities: Opportunities and challenges. *Eur. Plan. Stud.* **2017**, *25*, 941–957. [[CrossRef](#)]

23. Lv, Y.; Lin, D. Design an intelligent real-time operation planning system in distributed manufacturing network. *Ind. Manag. Data Syst.* **2017**, *117*, 742–753. [[CrossRef](#)]
24. Kawashima, K. Service outsourcing and labour mobility in a digital age: Transnational linkages between Japan and Dalian, China. *Glob. Netw.* **2017**, *17*, 483–499. [[CrossRef](#)]
25. Täuscher, K. Leveraging collective intelligence: How to design and manage crowd-based business models. *Bus. Horiz.* **2017**, *60*, 237–245. [[CrossRef](#)]
26. Zhai, S. 44. Research on the Third Party Logistics System and Economic Performance Optimization Based on Big Data Analysis. *Boletín Tecnol.* **2017**, *55*, 11.
27. Cazabat, G.; Belu, M.G.; Popa, I.; Paraschiv, D.M. Models and Practice of Retail Location on the Romanian Market. *Amfiteatru Econ.* **2017**, *19*, 493.
28. Aversa, J.; Doherty, S.; Hernandez, T. Big Data Analytics: The New Boundaries of Retail Location Decision Making. *Pap. Appl. Geogr.* **2018**, *4*, 390–408. [[CrossRef](#)]
29. Chin, T.; Rowley, C. *The Future of Chinese Manufacturing: Employment and Labour Challenges*; Elsevier: Amsterdam, The Netherlands, 2018.
30. Fountain, J.; Langar, S. Building Information Modeling (BIM) outsourcing among general contractors. *Autom. Constr.* **2018**, *95*, 107–117. [[CrossRef](#)]
31. Ancarani, A.; Di Mauro, C. Reshoring and Industry 4.0: How often do they go together? *IEEE Eng. Manag. Rev.* **2018**, *46*, 87–96. [[CrossRef](#)]
32. Barbieri, P.; Ciabuschi, F.; Fratocchi, L.; Vignoli, M. What do we know about manufacturing reshoring? *J. Glob. Oper. Strateg. Sourc.* **2018**, *11*, 79–122. [[CrossRef](#)]
33. Burden, K. Impact of disruptive technologies on sourcing and outsourcing transactions. *Comput. Law Secur. Rev.* **2018**, *34*, 886–889. [[CrossRef](#)]
34. Deng, M.; Cao, Y. Innovation and Effect Evaluation Model of Education and Training Outsourcing of State-owned Enterprises under Big Data. *Educ. Sci. Theory Pract.* **2018**, *18*, 6.
35. Ladengruber, R. Hidden Cost Drivers in IT Outsourcing Projects. In Proceedings of the 21. Internationales Rechtsinformatik Symposium IRIS, Salzburg, Austria, 22–24 February 2018; pp. 635–643.
36. Moradlou, H.; Tate, W. Reshoring and additive manufacturing. *World Rev. Intermodal Transp. Res.* **2018**, *7*, 241–263.
37. Pogodina, T.V.; Muzhavleva, T.V.; Udaltsova, N.L. Characteristics of venture capital investing in a climate of the digitalization of the Russian economy. *Int. J. Civ. Eng. Technol.* **2018**, *9*, 698–706.
38. Chang, Y.H.; Yeh, Y.J.Y. Industry 4.0 and the need for talent: A multiple case study of Taiwan’s companies. *Int. J. Prod. Dev.* **2018**, *22*, 314–332. [[CrossRef](#)]
39. Ancarani, A.; Di Mauro, C.; Mascali, F. Backshoring strategy and the adoption of Industry 4.0: Evidence from Europe. *J. World Bus.* **2019**, *54*, 360–371. [[CrossRef](#)]
40. Chenou, J.M.; Radu, R. The “right to be forgotten”: Negotiating public and private ordering in the European Union. *Bus. Soc.* **2019**, *58*, 74–102. [[CrossRef](#)]
41. Dachs, B.; Kinkel, S.; Jäger, A. Bringing it all back home? Backshoring of manufacturing activities and the adoption of Industry 4.0 technologies. *J. World Bus.* **2019**, *54*, 101017. [[CrossRef](#)]
42. Kim, J.; Torneo, A.R.; Yang, S.B. Philippine readiness for the 4th industrial revolution: A case study. *Asia-Pac. Soc. Sci. Rev.* **2019**, *19*, 139–153.
43. Agarwal, S.; Pughat, A.; Sharma, V. Supplier selection problem in IoT solutions. *Int. J. Pervasive Comput. Commun.* **2019**, *54*, 360–371. [[CrossRef](#)]
44. Chakraborty, G. Evolving profiles of financial risk management in the era of digitization: The tomorrow that began in the past. *J. Public Aff.* **2019**, *20*, e2034. [[CrossRef](#)]
45. Gadde, L.E.; Snehota, I. What does it take to make the most of supplier relationships? *Ind. Mark. Manag.* **2019**, *83*, 185–193. [[CrossRef](#)]
46. Schmitt, P.A. Translation 4.0—Evolution, Revolution, Innovation or Disruption? *Leb. Sprachen* **2019**, *64*, 193–229. [[CrossRef](#)]
47. Silva, V.L.; Kovaleski, J.L.; Pagani, R.N.; Silva, J.D.M.; Corsi, A. Implementation of Industry 4.0 concept in companies: Empirical evidences. *Int. J. Comput. Integr. Manuf.* **2019**, *33*, 325–342. [[CrossRef](#)]
48. Moriset, B. *E-Business and E-Commerce*; Elsevier: Oxford, UK, 2018.
49. Inklaar, R.; Jäger, K.; O’Mahony, M.; Van Ark, B. European productivity in the digital age: Evidence from EU KLEMS. In *Measuring Economic Growth and Productivity*; Academic Press: Cambridge, MA, USA, 2020; pp. 75–94.
50. Asthana, S.; Dwivedi, A. Performance measurement of India-based third party logistics sector: An empirical study of user versus provider perspectives. *Prod. Plan. Control* **2020**, *31*, 259–272. [[CrossRef](#)]
51. Matsumoto, T.; Chen, Y.; Nakatsuka, A.; Wang, Q. Research on horizontal system model for food factories: A case study of process cheese manufacturer. *Int. J. Prod. Econ.* **2020**, *226*, 107616. [[CrossRef](#)]

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