



ANALYSIS OF THE DETERMINANTS OF OPERATIONAL EFFICIENCY IN COMPANIES IN THE SERVICE SECTOR: A STRATEGIC MANAGEMENT PERSPECTIVE

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Summary

A documentary review was carried out on the production and publication of research papers related to the study of the Operational Efficiency, Services and Strategic Management variable. The purpose of the bibliometric analysis proposed in this document was to know the main characteristics of the volume of publications registered in the Scopus database during the period 2018-2023, achieving the identification of 159 publications. The information provided by this platform was organized through graphs and figures, categorizing the information by Year of Publication, Country of Origin, Area of Knowledge and Type of Publication. Once these characteristics have been described, the position of different authors on the proposed topic is referenced through a qualitative analysis. Among the main findings made through this research, it is found that the United States, with 31 publications, was the country with the highest scientific production registered in the name of authors affiliated with institutions in that nation. The Area of Knowledge that made the greatest contribution to the construction of bibliographic material related to the study of Operational Efficiency, Services and Strategic Management was Business, Administration and Accounting with 51 published documents, and the most used Publication Type during the period indicated above were Journal Articles with 63% of the total scientific production.

Keywords: Operational Efficiency, Services, Strategic Management

1. INTRODUCTION

Companies in the service sector combine those activities that are not focused on the production of goods, but on services. These organizational enterprises comprise a series of very diverse activities, such as, for example, commerce, transportation, education, health, tourism, among others. But it also encompasses a series of other activities such as banking, insurance, media, among others. This economic sector is considered the most important in developing and developed countries, given its importance in economic growth, so it is necessary to determine those operational efficiencies implemented in companies in the service sector.

The characteristics of operational efficiency around service sector companies is the way in which organizations describe the various situations of one or more processes that are



present in companies, optimizing resources and offering high quality service for customers. According to operational efficiency, it seeks to do things better than the competition, which is not only about being a good business, but also being able to use resources effectively. That is why nowadays companies in this sector have become a fundamental global concept to achieve excellence. For this reason, companies in the service sector must have convenient tools to make their management more efficient in terms of: cost control, resource management, quality management system and technological resources according to performance. (Orellana, 2016)

According to the Constitution, for an increase in the service sector, it is necessary to require a separate and distinguishable organization, since this sector must completely control the identification and development of customers, price and offer, among others. In a nutshell, these organizations are focused on a productive function and this adds complementary service offerings. In addition, the Strategic Business Unit (SBU) encompasses a series of functions in companies, including the area of Marketing, sales, products, services, and human resources. . This strategy aims to contain a series of combinations of services or products, where elements can be found to generate a strategy of differentiation in service and generate revenue. (Gebauer, 2009)(Gebauer H. G., 2011)

However, when it comes to building specific capabilities of certain services, it is to be expected that a number of challenges arise between two or more organizations. That is why, in order for service sector companies to expand successfully, organizations must implement the UEN since this strategy offers a model to structure the provision of services looking for an additional difference, adaptability and greater organization.

Finally, considering that new technologies are transforming the way we interact, work and communicate, as well as how organizations create value; All this, it is known as the fourth industrial revolution, which is characterized with greater efficiency in business sectors. Therefore, it is necessary for organizations to transform, evaluate, reorganize strategies and processes in order to improve efficiency and implement new digital technologies. It is necessary for organizations in the service sector to integrate these digital technologies, involving the entire value chain, customers and suppliers. For this reason, this article seeks to describe the main characteristics of the compendium of publications indexed in the Scopus database related to the variables (Schwab, 2016)Operational Efficiency, Services and Strategic ManagementLike this. Such as the description of the position of certain authors affiliated with institutions, during the period between 2018-2023.

2. GENERAL OBJECTIVE

To analyze, from a bibliometric and bibliographic perspective, the preparation and publication of research papers in high-impact journals indexed in the Scopus database on the variables Operational Efficiency, Services and Strategic Management during the period 2018-2023.

3. METHODOLOGY

This article is carried out through a research with a mixed orientation that combines the quantitative and qualitative method.

On the one hand, a quantitative analysis of the information selected in Scopus is carried out under a bibliometric approach of the scientific production corresponding to the study of Operational Efficiency, Services and Strategic Management. On the other hand, examples of some research works published in the area of study mentioned above are analyzed from a qualitative perspective, based on a bibliographic approach that allows describing the position of different authors on the proposed topic. It is important to note that the entire



search was carried out through Scopus, managing to establish the parameters referenced in *Figure 1*.

3.1. Methodological design

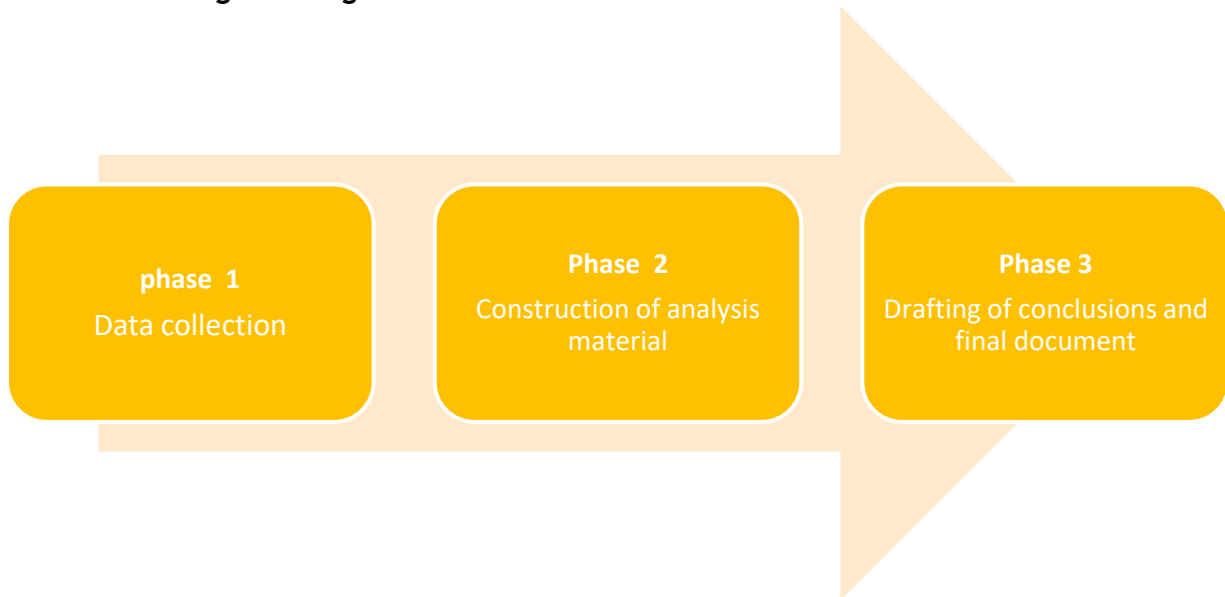


Figure 1. Methodological design

Source: Authors' own creation

3.1.1 Phase 1: Data collection

Data collection was carried out from the Search tool on the Scopus website, where 159 publications were obtained from the following filters:

TITLE-ABS-KEY (operational AND efficiency, AND services, AND strategic AND management) AND PUBYEAR > 2017 AND PUBYEAR < 2024

- Published documents whose study variables are related to the study of the variables Operational Efficiency, Services and Strategic Management.
- Limited to the years 2018-2023.
- No distinction of country of origin.
- Without distinction of area of knowledge.
- No distinction of type of publication.

3.1.2 Phase 2: Construction of analytical material

The information collected in Scopus during the previous phase is organized and then classified by graphs, figures and tables as follows:

- Co-occurrence of words.
- Year of publication.
- Country of origin of the publication.
- Area of knowledge.
- Type of publication.

3.1.3 Phase 3: Drafting of conclusions and outcome document

In this phase, the results of the previous results are analysed, resulting in the determination of conclusions and, consequently, the obtaining of the final document.

4. RESULTS

4.1 Co-occurrence of words

Figure 2 shows the co-occurrence of keywords found in the publications identified in the Scopus database.

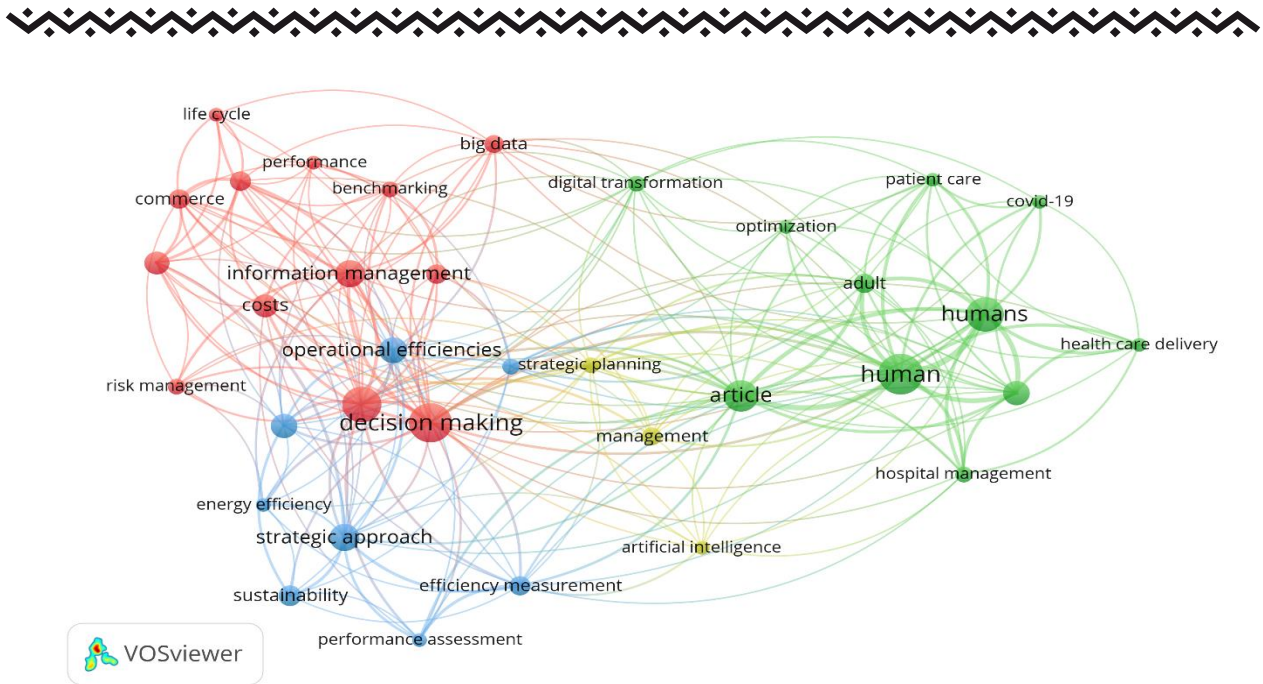


Figure 2. Co-occurrence of words

Source: Authors' own elaboration (2024); based on data exported from Scopus.

Superior Operational Efficiency was the most frequently used keyword within the studies identified through the execution of Phase 1 of the Methodological Design proposed for the development of this article. Decision Making is among the most frequently used variables, associated with variables such as Artificial Intelligence, Innovation, Sustainability, Competition, Strategic Planning, Trade, Big Data. Therefore, it is striking that operational efficiency refers to the ability of each organization to optimize its resources efficiently, in order to achieve its goals. In the field of the service sector, this would imply a good distribution of resources in its profitability and customer service. Therefore, operational efficiency in this sector seeks to maximize high quality in an optimal way, reducing costs and increasing the scale of productivity compared to other competitors, establishing free market competitions. However, these strategies will allow for higher unemployment in the long term, allowing for greater opportunities, benefits and adaptability in this sector. It is necessary for organizations focused on the service sector to integrate these three elements in order to increase their competitiveness, maximize their profits, reduce costs, improve the customer experience and address a broader market.

4.2 Distribution of scientific production by year of publication

Figure 3 shows how scientific production is distributed according to the year of publication.

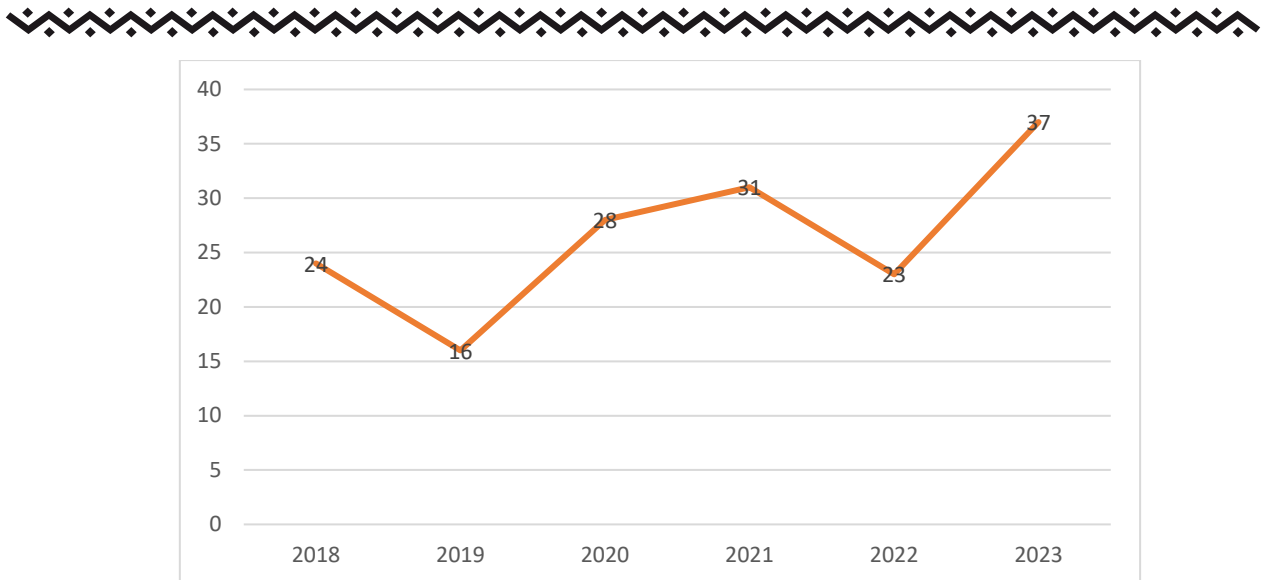


Figure 3. Distribution of scientific production by year of publication.

Source: Authors' own elaboration (2024); based on data exported from Scopus

Among the main characteristics evidenced through the distribution of scientific production by year of publication, an increase in the number of publications registered in Scopus during the years 2023 is noticeable, reaching a total of 37 documents published in journals indexed on this platform. This can be explained thanks to articles such as the one entitled "Development of a remote maintenance adoption model in augmented reality through qualitative analysis of success factors", this article aims to provide a novel model of ARRM adoption and provides six success factors of technological adoption, seven organizational and four environmental. Promotion factors are the key characteristics of ARRM, qualitative operational advantages, quantitative operational advantages, value proposition, value creation network, finance, image, adoption management, resource allocation, strategic realignment, skills gap, and government regulation; In addition, augmented reality user experience, data connection, provision of information, intellectual property protection, and remote acceptance of the service were identified as inhibiting factors. This article qualifies as the first attempt to consolidate the engineering-focused ARRM literature regarding remote service delivery, adding the perspective of industrial adoption and delving into the impact of the cross-organizational nature of ARRM technology on industrial adoption. Therefore, this research contributes to the transition from pure engineering research to ARRM industrial adoption research. (Müller, 2023)

4.3 Distribution of scientific output by country of origin

Figure 4 shows how scientific production is distributed according to the country of origin of the institutions to which the authors are affiliated.

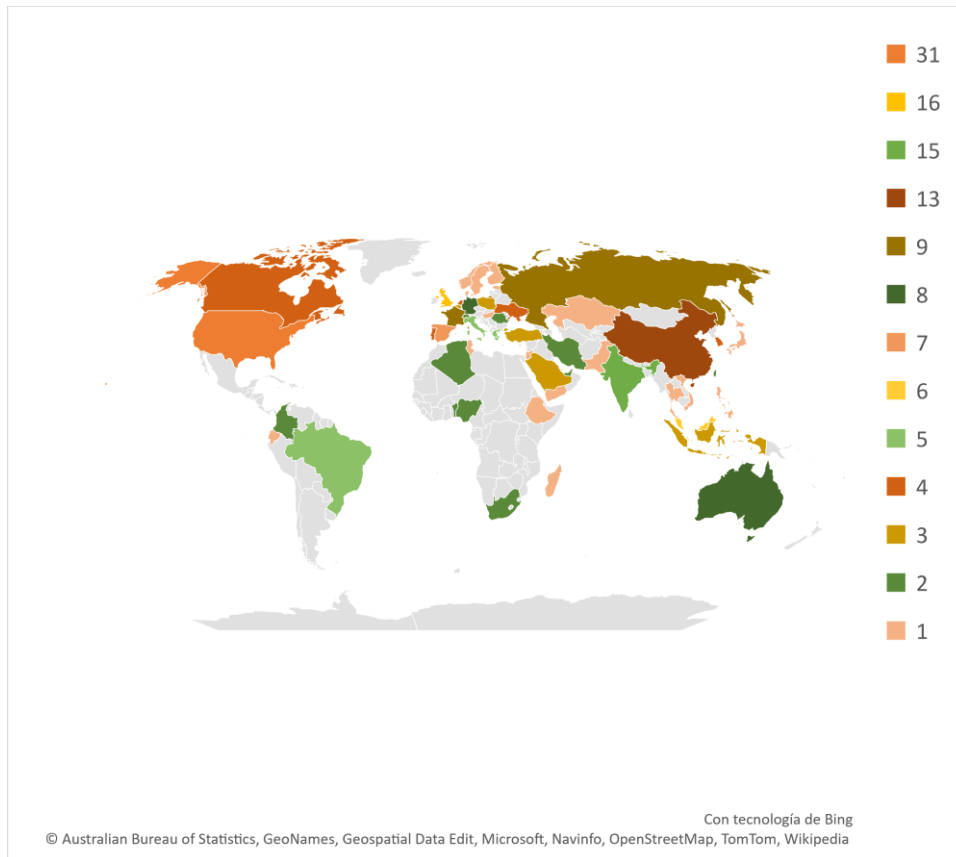


Figure 4. Distribution of scientific production by country of origin.
 Source: Authors' own elaboration (2024); based on data provided by Scopus.

Within the distribution of scientific production by country of origin, the registrations from institutions were taken into account, establishing the United States as the country of this community, with the highest number of publications indexed in Scopus during the period 2018-2023, with a total of 31 publications in total. In second place, the United Kingdom with 16 scientific papers, and India occupying the third place presenting to the scientific community, with a total of 15 documents among which is the article entitled "Applicability of blockchain in the management of urban water supply and sanitation systems in Spain" This article explores the applicability of blockchain technology, and from distributed ledger technologies in general, to urban water supply and sanitation services in Spain. The potential of this technology for process improvement in this sector is evaluated through a specific methodology of strategic analysis developed for this purpose. First, it explores the technical, legal and management factors that condition the potential use of this technology to address the global, operational and governance challenges faced by urban water management. Second, strategic analysis tools (e.g., value chain, competition factors, and benchmarking) are used to model a water utility organization as a set of processes and characterize blockchain as an enabling technology with benefits (traceability, immutability, and disintermediation) and limitations. From the cost-benefit analysis, it is possible to discern use cases in which the implementation of a blockchain could improve the performance of the organization. The results identify the management processes and sub-processes of urban water companies in which the use of blockchain could improve their performance: comprehensive maintenance, management of major incidents, and supplier management (Rodríguez Furones, 2023)

4.4 Distribution of scientific production by area of knowledge



Figure 5 shows the distribution of the elaboration of scientific publications based on the area of knowledge through which the different research methodologies are implemented.

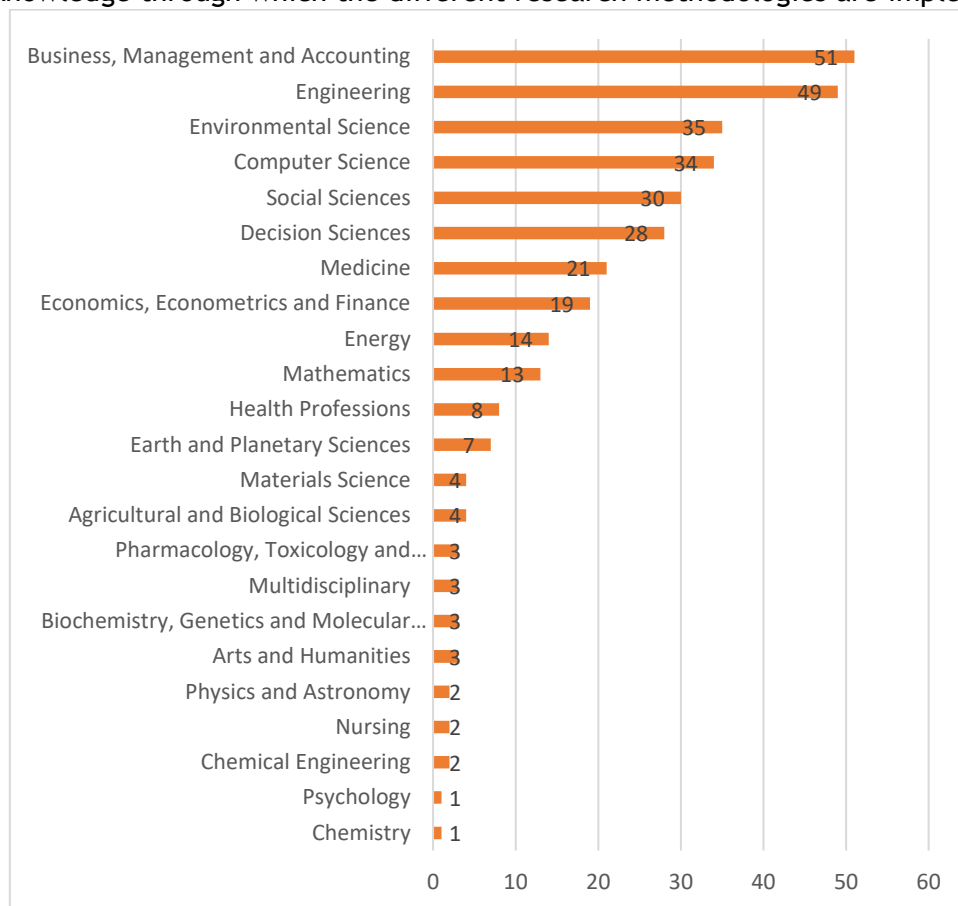


Figure 5. Distribution of scientific production by area of knowledge.

Source: Authors' own elaboration (2024); based on data provided by Scopus

Business, Accounting and Commerce was the area of knowledge with the highest number of publications registered in Scopus with a total of 51 documents that have based its methodologies Operational Efficiency, Services and Strategic Management. In second place, Engineering with 49 articles and Environmental Sciences in third place with 35. The above can be explained thanks to the contribution and study of different branches, the article with the greatest impact was registered by Business, Accounting and Commerce entitled "Measuring the performance of road freight transport: a case of the trucking industry" In this study, we attempt to analyze the current state of the art on the ubiquitous role of digital technologies in healthcare and identify how the COVID-19 pandemic forced all systems to disruptively adopt new digital technologies, which affected both management and business. . To elucidate the role of digital technologies in healthcare, we conducted a structured literature review on the state of the art of digital transformation in healthcare to identify how the healthcare sector is experiencing a renaissance due to the pandemic. Our findings show that future research is divided into three promising areas: (a) digital healthcare services enabled by digital technologies, (b) stakeholder engagement through digital technologies for healthcare services, and (c) value impact generated by digital transformation for healthcare actors. We link these areas, showing how different digital technologies - smart health technologies, data-driven and data collection technologies, Industry 4.0 tools and technologies, cognitive technologies, and medicines and disease technologies - lead to digital service delivery and operational efficiencies. and value creation in the healthcare system.(Dadsena, 2023)



4.5 Type of publication

In the following graph, you will see the distribution of the bibliographic finding according to the type of publication made by each of the authors found in Scopus.

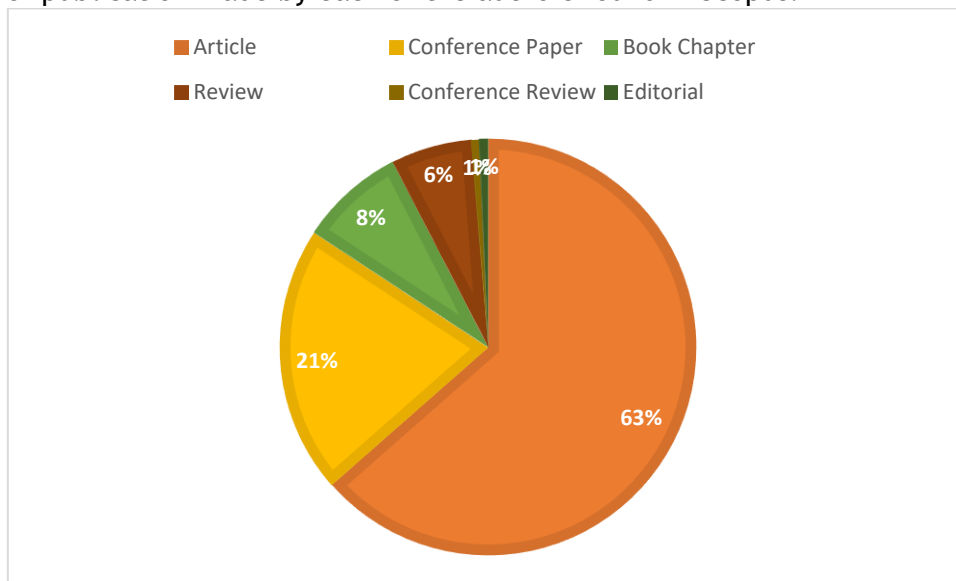


Figure 6. Type of publication.

Source: Authors' own elaboration (2023); based on data provided by Scopus.

The type of publication most frequently used by the researchers referenced in the body of this document was the one entitled Journal Article with 63% of the total production identified for analysis, followed by Session Paper with 21%. Chapter of Session are part of this classification, representing 8% of the research papers published during the period 2022-2024, in journals indexed in Scopus. In the latter category, the one entitled "The trend of parameters to evaluate port performance: a systematic review of the literature" stands out. This study aims to map the parameters used to determine port performance. The scope of the article under review contains an assessment of port performance from an operational, financial and sustainable perspective. The study's two research questions are listed below. The parameter of the Trend Port indicator is the first one. What parameters are considered when evaluating public ports? The limitation of this study is 200 articles investigating the commercial port. In future research, there is a need for research that examines performance measurement factors or parameters in government-organized ports. The results of the study show that the trend of port performance parameters towards sustainable port management guides port growth so that public and private officials preserve the effectiveness of the port. (Hardianto, 2023)

5. CONCLUSIONS

Through the bibliometric analysis carried out in this research work, it was established that the United States was the country with the highest number of published records in the Operational Efficiency, Services and Strategic Management variables. With a total of 31 publications in the Scopus database. In the same way, it was possible to establish that the application of theories framed in the area of Business, Accounting and Commerce, For several decades, the service sector has stood out for an active participation in the economic growth of several economies worldwide. In view of this, it is necessary for companies in this sector to be at the forefront of changes and have adaptability based on the innovation factor. In addition, these companies are characterized by efficiently using the resources invested in their economic activity, that is, maximizing these resources as much as possible,




since they require substantial investments. That is why companies in the service sector must be attentive to the relationship between the results they manage to obtain and the resources used for their management, this fact encourages the need to carry out constant evolutions regarding operational efficiency and strategic management implemented in this sector of the economy. To this end, it is necessary to evaluate companies in the service sector, which are derived from 7 dimensions, on which leadership, planning, strategy, processes, organization, customer satisfaction, human resources competencies and social responsibility are based. These dimensions are broken down from management models, service quality and innovation management. These elements are key to achieving efficiency and excellence in this sector.

In addition, it is essential that companies in this sector implement strategies such as the UEN which are effective tools to structure, transform and revolutionize the provision of services and generate competitive advantages among other organizations, it is also necessary for this sector to stimulate the use of technological resources in its business processes and strategies since this resource not only stimulates operational efficiency, but also stimulates the use of technological resources in its business processes and strategies. rather, it stimulates the factor of innovation, possibility and adaptability to future changes and stimulates the sustainability of companies.

REFERENCES

- [1] Dadsena, K. K. (2023). *Measuring the performance of road freight transport: a case from the trucking industry*. India.
- [2] Gebauer, H. G. (2011). *Competitive advantage through service differentiation by manufacturing companies*.
- [3] Gebauer, H. P. (2009). *Service Orientation of Organizational Structures*.
- [4] Hardianto, A. M. (2023). *The trend of parameters to evaluate port performance: a systematic review of the literature*. Indonesia.
- [5] Müller, M. S. (2023). *Development of a remote maintenance adoption model in augmented reality through qualitative analysis of success factors*. UNITED KINGDOM, GERMANY.
- [6] Orellana, A. D. (2016). *GREATER OPERATIONAL EFFICIENCY TO HIGHER DEGREE OF IMPLEMENTATION OF LEAN TOOLS IN EMPRESA DE ENERGÍA, LIMA, PERU*. LIMA-PERU.
- [7] Rodríguez Furones, A. I. (2023). *Applicability of blockchain in the management of urban water supply and sanitation systems in Spain*. SPAIN.
- [8] Schwab, K. (2016). *The Fourth Industrial Revolution*. Ander-Egg, E. (2002). *Methodology and practice of community development*. Argentina. Lumen Publishing.
- [9] Arias, F. (2006). *The research project. Introduction to scientific methodology*. Caracas, Editorial Episteme.
- [10] Arias, F. (2012). *The research project. Introduction to scientific methodology*. (6th ed.). Venezuela: Editorial Episteme.
- [11] Ávila Acosta, R. (2001). *Guide to the preparation of the thesis: research methodology; how to prepare the thesis and/or research, examples of thesis and/or research designs*. Lima: ediciones R.A.
- [12] Bavaresco, A. (2008). *Research techniques: Manual for the preparation of theses, monographs, reports*. 8th ed. Maracaibo: International Press.
- [13] Bernal, C. (2010), *Research methodology*. Third edition PEARSON
- [14] EDUCATION, Colombia.
- [15] Brown, R.L., & Holmes, H. (1986). *The use of a factoranalytic procedure for assesing the*
- [16] *validity of an employee safety climate model*. Accident Analysis and Prevention.

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- [17] 18(6): pp. 455-470.
- [18] Burke, Michael et al., 2010, "The dread factor: how hazards and safety training influence learning and performance", *Journal of Applied Psychology*, vol. 96, no. 1, pp. 46-70.
- [19] Cabezas, Andrade & Torres, (2018). Introduction to the methodology of scientific research. University of the Armed Forces ESPE. First Edition. Ecuador.
- [20] Camirra, H., & Cartaya, S. (2009). Guide to Academic Research. Journal of Teaching, Research, Extension. Monsignor Arias Pedagogical University Institute. (Available in: <https://docs.google.com/viewer?>).
- [21] DOG. Andean Instrument on Occupational Safety and Health. Decision 584. Guayaquil: May 7, 2004, p.2.
- [22] Chavez, N. (2007). Introduction to Educational Research. 4th Edition. Maracaibo, Venezuela.
- [23] Cheyne, A., Cox, S., Oliver, A., & Thomas, J. (1998). Modelling Employee Attitudes to safety. *Work and Stress*. Vol. 12. No. 3.
- [24] Cronbach, L.J. (1951). Coefficient alpha and the internal structure of test. *Psychometrika*.
- [25] Etecé Editorial Team. (Available at: <https://concepto.de/percepcion/>).
- [26] Escudero, C., & Cortez, L. (2018). Qualitative techniques and methods for scientific research. UTMACH Editions. Technical University of Machala.
- [27] Etkin, Jorge (2000): *Politics, Governance and Management of Organizations*, Prentice Hall, Buenos Aires.
- [28] Fracica, G. (1988), *Simulation Model in Sampling*, Universidad de la Sabana, Bogotá, p.36.
- [29] Franklin, E. (1998). *Business Organization (First Edition ed.)*. Mexico City: Mc. GRAW-HILL.
- [30] Garcia, M. (2009). Organizational Climate and its Diagnosis: A Conceptual Approach. In: *Revista Cuadernos de Administración*. 25 (42): 43-61.
- [31] Glendon, A. & Staton, N. (2000): Perspectives on safety culture. *Safety Science*, 34, 193-214.
- [32] Goodstein, L. (1998). *Applied strategic planning*. Editorial Page 15 Multisciences. McGraw Hill. Colombia.
- [33] Hernandez R.; Fernandez, C. & Baptista, P. (2003). *Research methodology*, 3. ed. Mexico City: McGraw-Hill. 705 pp.
- [34] Hernandez, R., Fernandez, C., & Baptista, P. (2006). *Research methodology*. 4th Edition. Mexico. McGraw-Hill.
- [35] Hernandez, R., Fernandez, C., & Batista, P. (2010). *Research methodology*. Mexico: McGraw Hill.
- [36] Hernandez, R., Fernandez, C., & Batista, P. (2014). *Research Methodology*. Mexico City, Mexico: McGraw-Hill Interamericana.
- [37] Trade Union Institute of Work, Environment and Health (ISTAS), Spain. (Available at: <https://istas.net/salud-laboral/actividades-preventivas/comite-de-seguridad-y-salud>).
- [38] Isla, R., & Díaz, D. (1997). Safety climate and attitude as evaluation measures of organizational safety. *Accident Analysis and Prevention*, Vol.29, n°5, pp.643-650.
- [39] Mager, R. F. (1975). *Measurement of educational intent*. Buenos Aires: Guadeloupe.
- [40] Meliá, J. & Sesé, A. (1999). The measurement of the occupational health and safety climate. *Annals of Psychology*. Publications Service of the University of Murcia. Spain.



- [43] Mendez, C. (1995). *Methodology, a guide for developing research designs in economic, accounting and administrative sciences*. McGraw-Hill. Bogotá, 1995, p. 92.
- [44] International Labour Office (ILO). *MEOSH-Guidelines-2001-05-0358-1-EN.Doc*. Geneva. December, 2001.
- [45] Rodríguez, A. and Pérez, A. *Scientific methods of inquiry and construction of knowledge*. *Journal of Business Administration School*, no. 82, 2017, Universidad EAN, Bogotá, Colombia.
- [46] Rodríguez, C. (2009). *ILO Conventions on Occupational Safety and Health: An Opportunity to Improve Working Conditions and Environment*. Buenos Aires, ILO Office in Argentina, ILO International Training Centre, Turin-IPC, 2009.
- [47] Rodríguez, W. (2011). *Scientific Research Guide*. UCH Publishing Fund. First Edition. File.
- [48] Salinas, P., & Cárdenas, M. (2009). *Social research methods*. (2nd ed.). Ecuador: Editorial Quipus CIESPAL.
- [49] Sanchez, H., & Reyes, C. (1986). *Methodology and design in scientific research*. Lima, p. 120.
- [50] Supo, J. (2014). *Scientific Research Seminars*. (Available in: www.seminariodeinvestigación.com).
- [51] Wilpert, B. (2001). *The relevance of safety culture for nuclear power operations*. London: Taylor & Francis.
- [52] Zohar, D. (1980). *Safety Climate in Industrial Organizations: Theoretical and Applied Implications*. *Journal of Applied Psychology*, 65(1), 96-102.