



Teamwork: A bibliometric analysis

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Abstract— The purpose of the article is to analyze the development of the scientific production of teamwork, including the period of Covid 19, it is the first bibliometric study on the subject. The data that support this work was obtained from Scopus and Web of Science. Quantitative research was carried out using bibliometric methodology, covering the entire universe from 1979 to December 2021, finally obtaining 670 scientific articles. These were worked on in both bases and processed in detail with Bibliometrix and VOS viewer based on scientific productivity, areas of knowledge, authors, sources, citations, keywords, methodologies used, and theories that support the investigations, among other aspects considered. In terms of results, it stands out that the country with the greatest contribution to the subject was the United States. The area of knowledge that prevailed was economic business. In addition, it was found that empirical research was the most used. Also, technically and conceptually, the Role Theory was the one that supported the largest number of studies. During the Covid-19 period, there was a significant increase in scientific production on teamwork, with the appearance of new perspectives and actors. For future research, it is recommended to work on the evaluation of the individual performance of the work team and carry out comparative research at the level of companies, industries, and countries, especially around agriculture.

Keywords: bibliometrics, covid-19, organizations, scientific production, teamwork.

I. INTRODUCTION

Teamwork is essential within any type of organization, “the reason is very simple: no one can fully possess the skills or knowledge necessary to apply themselves to different work and organizational situations” [1]. In this way, it is like “the formation of teams arises from the need that the organization has to achieve specific objectives” [2] since “they are immersed in highly dynamic global contexts that they require effective work teams to survive and grow, so it is necessary to find strategies to achieve this” [3], where “group behavior and values intervene directly in the fulfillment of its mission, vision and strategic objectives” [4].

It is a necessary capacity in the labor market, which facilitates the achievement of objectives, increases empowerment, innovation, and improvement of skills. In relation to this, it is important to highlight that “there are no defined rules to form effective teams” [5], so each organization must ensure that it is structured according to its needs.

Given the above, a factor that has made it more difficult to carry out teamwork effectively was health crisis, where “the world of work has been deeply affected by the global virus pandemic” [6]. For this reason, businesses began “to rethink their ways of working, what the new articulation between teams of collaborators will be like, how they will manage their new reality, among many other issues that may arise” [7].

Bibliometrics is an area of Scientometrics that allows the study of scientific activity of all kinds, from social sciences to natural sciences, to name a few. Its unit of analysis is the scientific article, that is, research, to be a true contribution to new knowledge. The interest in this area of research is mainly that it is related to the researcher's decision-making, for teamwork, as part of his task of managing new knowledge, and this, at the same time, allows defining new lines of research that in some occasions have been little or not studied at all [8].

The use of bibliometric research it has exponential growth in all areas of study. It analyzes topics of interest in various contexts through research in multiple disciplines, knowledge specialties, fields, articles, and manuscripts that make this type of research have universal recognition [9].

Thus, this study carried out a bibliometric analysis aimed directly at the scientific production of teamwork, making a distinction in the years 2020 and 2021, periods where the Covid-19 health crisis has generated events that have produced significant changes and difficulties worldwide. Bibliometrics is understood as the “quantitative and qualitative analysis of scientific production (especially scientific articles) to investigate the development, structure, dynamics, trends, and relationships of scientific practice” [10]. Likewise, this “uses mathematical and statistical methods to scientific literature and the writers who produce it with the aim of learning and examining scientific dynamism” [11].

To carry out the study, first of all, the databases to be used were selected, including Scopus and Web of Science, and a search equation that covered the objective of the research was designed for each platform. The final scientific documents were obtained and entered for examination in Bibliometrics and VOS viewer. The findings will be presented at the level of scientific production worldwide, citations of documents, areas of knowledge, most relevant authors and their impact, co-citations, most relevant sources, keywords, classification of methodology, and theories of teamwork that support the articles of evaluated scientists.

II. THEORETICAL FRAMEWORK

Currently, “rapid changes within the organizational environment have required organizational processes and structures that are much more flexible and provide greater responsiveness than traditional structures” [12], these changes are related to strategic, economic, technical and social factors, which have led to organizations being restructured around interdependent teams [13]. Given this, “organizations implement teamwork systems to improve their results which are achieved by working together, working better, making creative contributions, and continually trying to improve organizationally and individually” [14]. In this way, teamwork has become an indispensable capacity within organizations, even more so with the complexities that arise daily in the uncertain environment in which it is inserted [15].

This is why working in a team is not simply collaborating together [16] but is defined as “a small number of people with complementary skills who are committed to a common purpose, a set of performance objectives and an approach for which they hold each other accountable” [17].

In this scenario, the people or human resources that make up a team have different roles and characteristics. According to [18], human resources “are the people who enter, remain and participate in the organization, regardless of their hierarchical level or their task”. Thus, among the main roles are the creative, resource researcher, coordinator, promoter, evaluator, cohesive, implementer, finisher, and specialist [19].

Once a work team has been formed with different roles, it is important to know their characteristics. The most notable are the common goal, empowerment, open relationship and communication, flexibility, recognition and appreciation, optimal performance, and motivation [20]. Then, “teamwork implies common objectives and specific functions of each member; this requires leadership capacity, good communication, and adequate coordination” [21].

Accordingly, the focus on the productivity and performance of work teams day after day is becoming essential in achieving the results of organizations [22], where using this efficient and optimal way of work allows, according to [23], “the joint realization of two objectives: first, the improvement of the working conditions of the personnel who work in production and, second, an increase in the productivity of the company in question.” In teamwork ideas, energies, forces, knowledge, and skills of the members of the company merge, allowing all efforts to be enhanced, thus reducing the time dedicated to carrying out each task and increasing the effectiveness and efficiency of the final results [24], [25].

It should be noted that the performance potential of the members depends on the resources that each one contributes, which includes aspects such as knowledge, skills and abilities [26], [27], which causes these people who make up a team as a whole to be able to “improve the

performance of small groups at all levels of the company and their versatility is in tune with the speed, intense competition and accelerated change that more and more high-performing organizations face” [28].

Multiple theories support teamwork, in fact, a scientific article, its common to sustain it base it on some theories formulated by various authors, which support the development of the research. A theory is “the set of statements that are logically connected to each other, and form an ordered and systematic epistemological unit that allows the explanation of reality, that is, of the regularities that occur in the real world” [29]. Also, with respect to the theories of teamwork, it can be highlighted that multiple theories support it, which are related to the behavior, conduct, attitude, motivation, and needs, among others, of the people who are part of a team. Furthermore, all theories will be identified in the data analysis.

On the other hand, the Covid-19 health crisis directly impacted various areas of organizations, which gave rise to many changes in daily life, one of the main ones had to do with "quarantine" or isolation” [30], [31], which caused companies to implement virtual teams or environments to continue with their processes [32], [33]. In fact, the Covid-19 health crisis was spreading rapidly throughout the world and many countries implemented strategies to avoid infection [34]. Currently, regarding organizational environments, some number of companies had required “electronic collaboration between workers, suppliers, clients, partners,” etc. for the development of their activities in both the production and service sectors” [35].

It is important to highlight that the Covid-19 emergency that is being experienced worldwide “definitely promoted a wide adoption of teleworking modalities for many people around the world, which makes it more relevant than before to understand the real impact of the virtual environments in the dynamics of teamwork” [36], where it must be considered that “to be successful, virtual collaboration must be managed in a specific way” [37]. The pandemic brought great challenges, where direct collaboration between one or more people has been difficult or even, in some cases, impossible in different work environments, generating implications for the effectiveness of teams [38] and forcing them to interact remotely through digital environments [39].

III. METHODOLOGY

To carry out this study, the bibliometric methodology was used, which entails statistical and mathematical methods [40], [41]. It has a total and descriptive scope, which "seeks to specify properties, characteristics and important features of any phenomenon analyzed” [42].

Data collection was carried out in two bibliographic reference databases, Scopus and Web of Science. Both “are platforms that are based on web technology and provide a complete overview of the global production of research in the fields of science, technology, medicine, social sciences and arts and humanities” [43]. These were selected because they are considered reliable and present high-quality data, where “the limited visibility of science published in peripheral journals, among others, are elements to take into account due to their importance and impact in the evaluation processes of scientific activity” [44].

Various concepts were discussed that supported and related to the main idea of this bibliographic review of teamwork. These were the productivity and performance of collaborators in organizations.

Next, a search equation was designed for Scopus and for Web of Science, each according to its search parameters and criteria. Subsequently, the search for the main word teamwork began, resulting in a total of 42,864 documents for Scopus and 16,582 documents for Web of Science.

The period covered was total from the creation of the databases until 2021. Different filters were applied, and exclusion criteria among the filters and selection criteria used are:

- Only articles and review articles.
- Exclusion of early access articles (Web of Science).
- Exclusion of articles that do not meet the standards that this study aims to achieve:

Criterion 1: Article that mentions teamwork but does not specifically address the performance of workers or the productivity of the organization.

Criterion 2: Article that addresses factors that could lead to good performance in the organization, but not related to teamwork.

Once the described filters were applied (Table 1), a total of 670 articles were obtained to be reviewed in depth, where 365 belong to the Scopus platform ranging from the years 1979 to 2021, and 305 to the Web of Science database that include from the years 1993 to 2021, there being 116 articles that were found repeated in both databases. (Table 1 – Total Scopus and Web of Science articles).

Table 1: Total Articles - Scopus and Web of Science.

Data Base	Scopus	Web Of science	Totals
Search Equation	(TITLE-ABS-KEY (Teamwork) AND TITLE-ABS-KEY (Organization) AND ALL FIELDS (productivity OR Performance) NAD TITLE-ABS-KEY (Employee)	Teamwork (Topic) and (Organization AND Productivity OR Performance) (All Fields) AND Employee (Topic) and Early Access (Exclude-Document types)	Scopus AND Web Of Science
Total documents	662	414	1076
Type of documents (articles)	490	413	903
Total base items	490	413	903
Articles excluded Criterion 1	23	18	41
Articles excluded Criterion 2	102	90	192
Periods	1979 – 2021	1993 – 2021	670
Total items to use	365	305	670

Source: Own elaboration.

They were exported and processed in Bibliometrics and VOS viewer, that “is a software tool to build and visualize bibliometric networks” [45]. Both software provided relevant bibliometric information, which provided very important information that served as a basis for formulating the conclusions and achieving the objectives set by the researchers [46].

IV. RESULTS

The data analysis was carried out by comparing two periods, the first included the bibliography that has been produced from the first year that it was published on this subject until 2021, the second period covered the scientific production generated in the 2020 health crisis period and 2021 (Figure 1), in order to have a separate perspective of the effects of the health crisis, on the topic of teamwork.

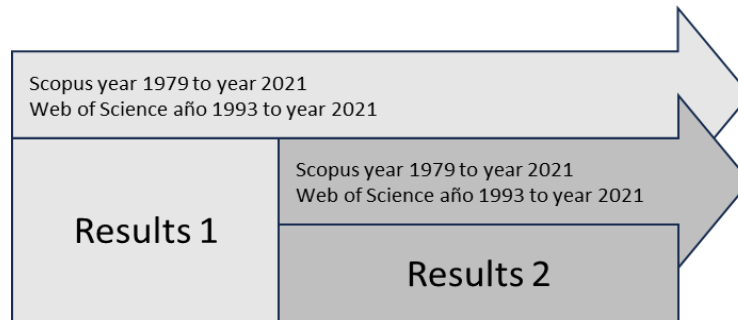


Figure 1: Years of Data Collection for Preparation of Results.
Source: Own elaboration.

In Scopus, the first article published regarding teamwork dates back to October 1979 called “The influence of a Meditation Relaxation Technique on Group Problem – Solving Effectiveness”. In Web of Science, the first document was enhancing staff performance Through a Customized Evaluation form in March 1993.

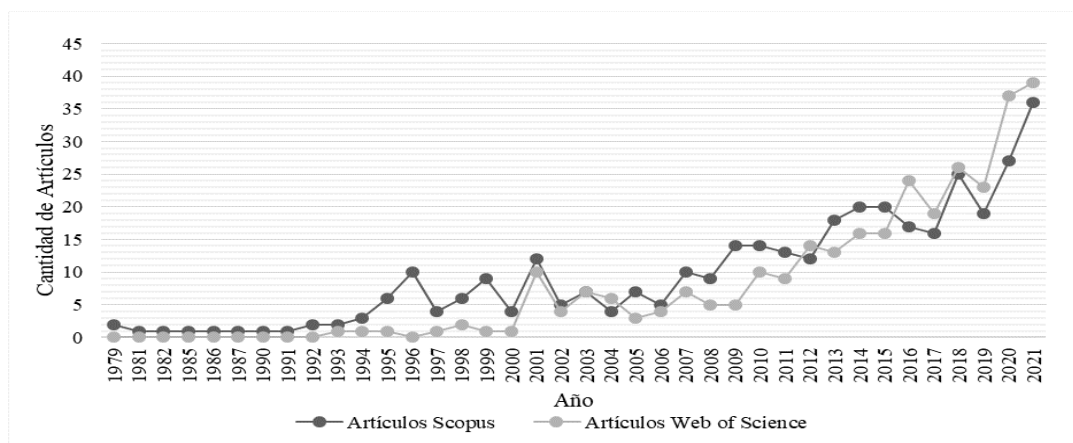


Figure 2: Annual Scientific Production.
Source: Own elaboration.

At the level of scientific production (Figure 2), considering both databases, they maintained a similar behavior, due to the fact that in the first years of publications they presented a low number of articles, however, since approximately 2006 and 2009 in Scopus and Web of Science respectively, there was a progressive increase which was most noticeable in the years 2020 and 2021.

Regarding the geographical areas where scientific work on the topic has been produced and published (Figure 3), it was observed that the North American continent was the one that registered the highest volume of articles, continuing with territories in Asia and Europe.



Figure 3: Scientific Production Continents.
Source: Own elaboration.

In accordance with the previous point in both databases, the United States is the country that maintains the greatest scientific production, reaching a total of 395 articles (Figure 4). Likewise, China continues with 100 and Germany with 91 documents, being also countries that present a high volume of publications. It should be noted that these last two countries were more relevant due to the number of documents on the Web of Science platform compared to Scopus, which maintained less influence on the topic.

Figure 5 shows the same information but for the period of 2020 and 2021, where the same three countries lead the published articles, but the fourth and fifth positions were occupied by a country from Asia (Iran) and another from Europe (Slovakia). Web of Science had the highest number of publications for four of the top five countries in the ranking, with the exception of the United States.

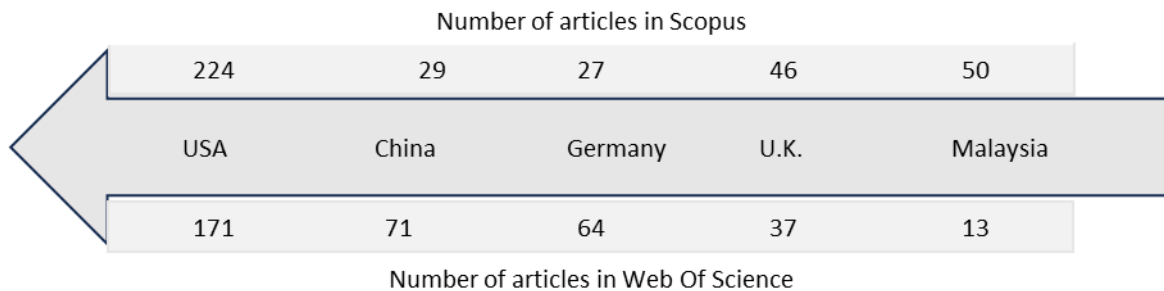


Figure 4: Scientific Production Countries.
Source: Own elaboration.

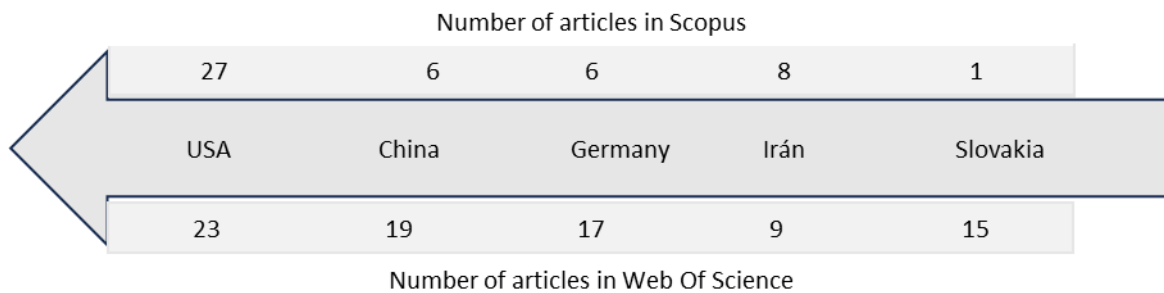


Figure 5: Scientific Production Countries 2020-2021.
Source: Own elaboration.

In the table 2, it could be observed that firstly, on the Scopus platform is the article “Existing Knowledge, Knowledge Creation Capability, and the Rate of New Product Introduction in High-Technology Firms” in 2005, reaching 777 citations. On the other hand, in Web of Science, “Why Does Affect Matter in Organizations?” published in 2007, stands out with a high number of citations of 534. It should be noted that this same publication reaches 597 citations in Scopus, being the third article most cited in said database.

Table 2: Most Cited Articles

Scopus		
Article name	Number of appointments	Year
Existing Knowledge, Knowledge Creation Capability, And The rate of New Product Introduction in High – Technology Firms	777	2005
Virtual Teams: Technology and the workplace of the future	669	1998
Why does affect matter in organization?	597	2007
Web of Science		
Article name	Number of appointments	Year
Why does affect matter in organizations?	534	2007
The conflict-positive organization: it depends upon us	196	2008
Effects of control over office workspace on perception of the work environment and work outcomes	195	2005

Source: Own elaboration.

In relation to the behavior of citations in the periods with Covid-19 (Table 3), Scopus continues to lead with the most cited article with 159, the one called “Covid-19 and the Workplace: Implications, Issues, And Insights for Future Research and Action”, published in 2021. On the other hand, the second most cited document in the years 2020-2021 was “Antecedents and Consequences of Empowering Leadership: Leader Power Distance, Leader Perception of Team Capability, and Team Innovation”, of the year 2020 located on the Web of Science platform.

Table 3: Most Cited Articles 2020-2021.

Scopus		
Article name	Number of appointments	Year
Covid-19 and the Workplace: implication, Issues, and insights for future research an action	159	2021
Antecedents and consequences of knowledge hiding: The moderating role of knowledge hidrs and Knowledge seekers in organizations	12	2021
Understanding collaboration with virtual assistants. The role of social identity and the extended self	9	2021
Web of Science		
Article name	Number of appointments	Year
Antecedents and consequences of empowering leaderships: Leader power distance, leader perception of team capability, and team innovation	17	2020
Understanding coordination in global software engineering: a mixed - methods study on the use of meeting and slack	13	2020
Antecedents and consequences of knowledge hiding: The moderating role of knowledge hidrs and knowledge seekers in organizations	10	2021

Source: Own elaboration.

Regarding the research areas (Figure 6), both Scopus and Web of Science presented a similar highlighted area, this is business, management and accounting or also called in the other database as economic business, achieving between the two platforms a total of 369 document. During 2020 – 2021, the business – related productivity trend continued, reaching 68 publications.

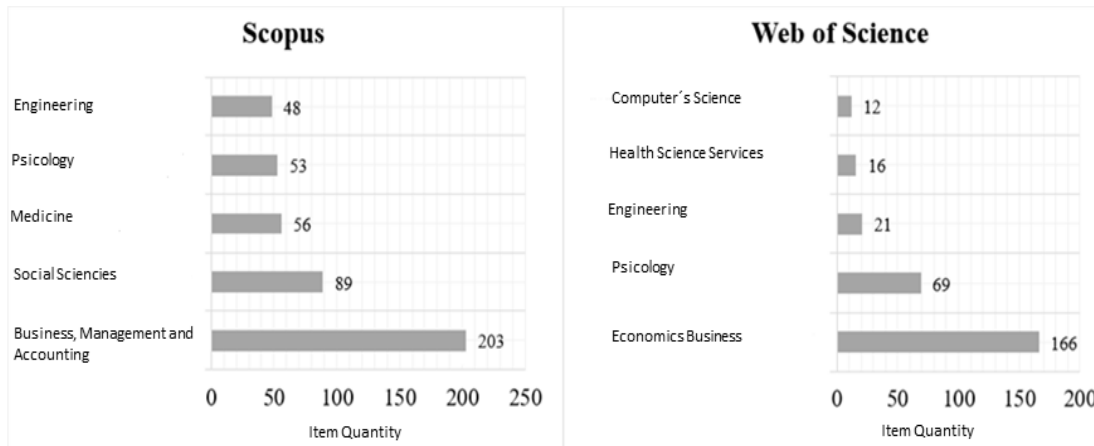


Figure 6: Knowledge Area Articles.
Source: Own elaboration.

Regarding the number of authors who contributed to research on the topic in the databases, 966 were counted in Scopus and 838 in Web of Science, of which the most prominent on both platforms was Tjosvold D. (Figure 7) with a total volume of 16 articles. The oldest document dates back to 2001 in Scopus and in 2015 in the Web of Science it was the most recent article by this author. In the pandemic years (2020-2021), it can be noted that several new authors emerged, which implies that from 2019 onwards, no articles associated with them were found.



Figure 7: Relevant Authors.
Source: Own elaboration.

Due to the impact of the authors, according to their h-index, this being understood as “the number of articles by a researcher with a number of citations greater than or equal to h” [50] proposed by Hirsch [51]. For its analysis, the two databases were considered (Table 4), where Tjosvold D. once again stood out in this metric, with an h-index of 5 in Scopus, which means that at least 5 documents have at least 5 citations. On the other hand, the other platform had an h-index of 10. Also, Korner M. was the one who contributed and stood out with an h-index of 3, being the second author, most relevant between both platforms.

In the years with a health crisis, the highest h-index was presented in Web of Science with the author Chen Y., but only reaching an index of 2. For the vast majority of remaining authors, both on this same platform and in Scopus, they presented an h-index of 1.

Table 4: Author Impact.

Scopus all articles				Scopus period 2020 - 2021			
Autor	H-index	Articles	Total quotes	Autor	H-index	Articles	Total quotes
Tjosvold D.	5	6	407	Anseel F.	1	1	159
Aruguman V.	4	4	266	Antonakis J.	1	1	159
Korner M.	3	3	185	Ashford Sp.	1	1	159
O oi Kb.	3	3	162	Bakker Ab.	1	1	159
Jonhonen M.	2	3	61	Bamberger P.	1	1	159
Web of Science all articles				Web of Science all articles			
Autor	H-index	Articles	Total quotes	Autor	H-index	Articles	Total quotes
Tjosvold D.	5	6	407	Chen Y.	2	2	20
Aruguman V.	4	4	266	Hoegl M.	2	2	15
Korner M.	3	3	185	Harth V.	2	2	9
O oi Kb.	3	3	162	Mache S.	2	2	9
Jonhonen M.	2	3	61	Antoni Ch.	2	2	6

Source: Own elaboration.

According to the co-citation network provided by VOS viewer, it was observed that Tjosvold, D., is once again the one who maintains the largest connection network with the rest of the authors, both in Scopus and Web of Science (Figure 8). Co-citation is understood when “two or more authors are cited together; when this occurs with significant frequency, it can be assumed that they work in the same area of knowledge, although they are not necessarily collaborating” [47].

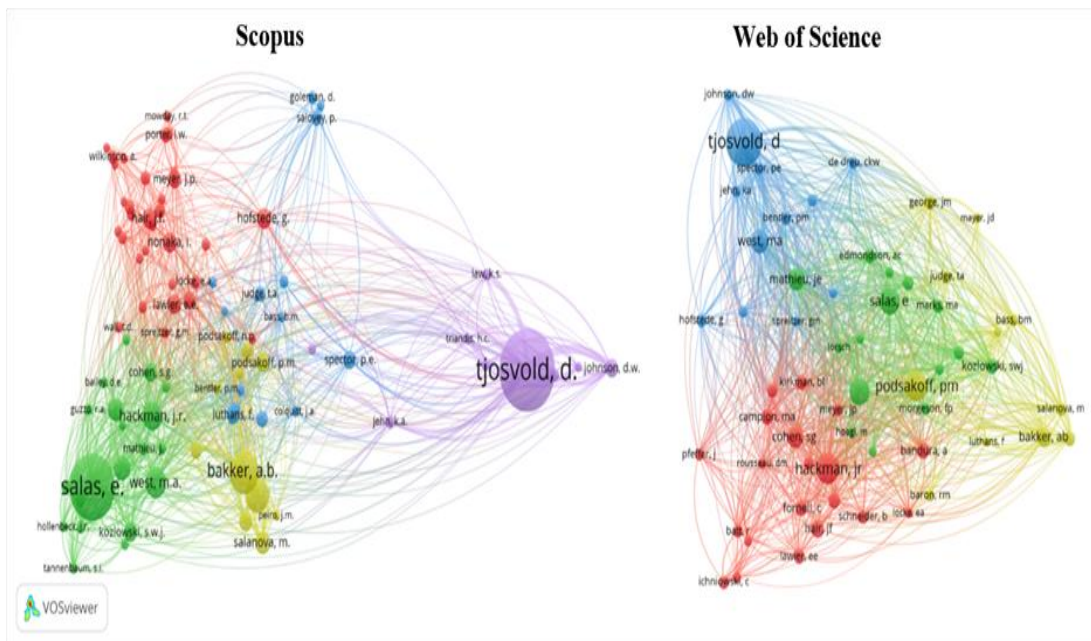


Figure 8: Co-Citation Network.
Source: Own elaboration.

The most important journals that published articles on the topic under study (Table 5), in Web of Science the International Journal of Human Resource Management stood out with a total of 8 articles, this journal “is the forum for academics and professionals of the human resource management (HRM) worldwide” [48]. Meanwhile, in Scopus the magazine Personnel Review was found with 7 documents, where it accepts “research that highlights innovation and emerging problems in the field, and the medium and long-term impact of the policy and practice of human resource management” [49]. For its part, in the period of 2020-2021, the order of the most significant sources in the two databases was rearranged, compared to those that stood out in past years, causing none to be highlighted.

Table 5: Most Relevant Sources and their H-Index

Scopus				
Source	Articles	H-index	Total quotes	Year
Personnel Review	7	4	172	2000
Bmc Health Services Research	6	4	135	2013
Journal of organizational Behavior	5	4	516	1991
International Journal of Industrial Ergonomics	4	3	10	1995
Journal of Applied Psychology	3	3	174	2006
Web of Science				
Source	Articles	H-index	Total quotes	Year
International Journal of Human Resource Management	8	7	114	2002
Journal of Organizational Behavior	7	7	592	2001
Frontiers in psychology	7	5	44	2018
Bmc Health Services Research	5	4	168	2013
Personnel Review	5	4	128	2002

Source: Own elaboration.

According to the analysis of the impact according to the h-index in the sources (Table 5), the one that maintained a higher one over the rest was Journal of Organizational Behavior, in both databases, in Web of Science with an h-index of 7 and in Scopus with one of 4. It should be noted that it is on this last platform that an article that comes from this magazine was first published, which was in 1991, unlike Web of Science which published it in 2001. In times of health crisis, the International Journal of Environmental Research and Public Health stood out in Scopus with an h-index of 2 and in Web of Science the same with a scope of 3.

Considering all the articles analyzed, the concept that had the most occurrences was Teamwork, with 82 in Scopus and 73 in Web of Science (Figure 9). Other keywords that stood out among the platforms were Job Satisfaction, Teams, Leadership, Performance and Team Performance, where this last word is considered very representative of this research, since it meets the central focus of the study. For 2020 – 2021, Teamwork continued to predominate with a total of 32 occurrences between both platforms, standing out on this occasion in Web of Science with 18 documents of the total.



Figure 9: Keywords.
Source: Own elaboration.

Among the most used methodologies in the period under analysis, the empirical method stood out, as it managed to obtain a total number of 490 documents, 258 belonging to Scopus and 232 to Web of Science (Figure 10). A document that has such a methodology is “Entrepreneurial Orientation and Performance of Nigerian Banks: The Mediating Effect of Teamwork” in Scopus which tried to explore the mediating effect of teamwork on the relationship between strategic orientation and organizational performance [52].

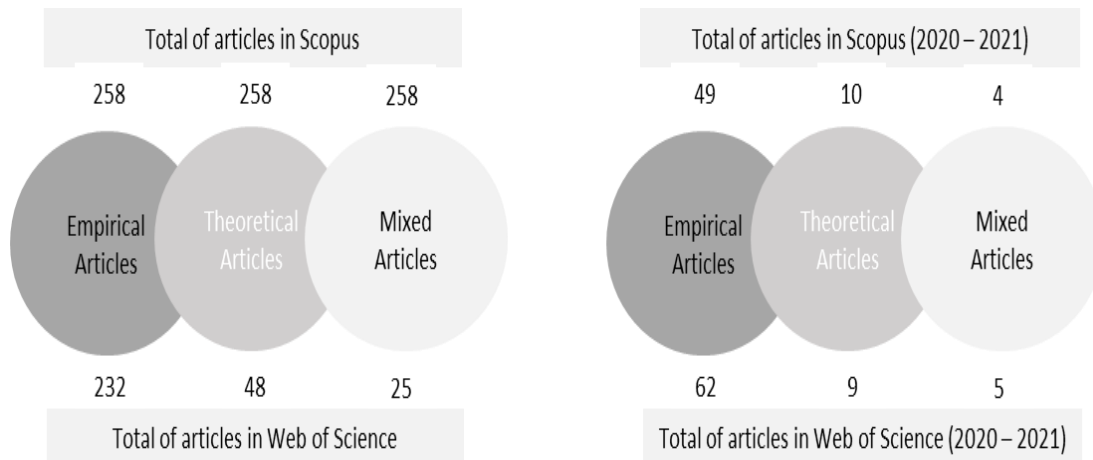


Figure 10: Article Methodologies.
Source: Own elaboration.

Carrying out an analysis in the pandemic period regarding the methodology used, the empirical method continues to lead with 49 articles in Scopus and 62 Web of Science. A relevant document was “Relationship between Perceived Teamwork Effectiveness and Team Performance in

Banking Sector of Serbia”, that investigated which factors of teamwork effectiveness have a positive relationship with team performance and the sustainability of the latter in the future [53], which was found on the Web of Science platform.

A total of 23 theories were identified. The theory that was most used in scientific research in both databases was Roles (Table 6), with 171 articles. One of the publications that supports this theory was “Multiple Team Membership: A Demand or Resource for Employees?” from 2014, which concluded that different roles in multiple teams are perceived as a job demand related to teamwork [54]. In this sense, the pre-existing literature mentions that it is necessary to study the nature of the multi-team, how it affects the effectiveness and the processes through which the multi-team is transformed [55].

Other theories that stood out were two-factor theory, self-determination theory, and organizational support theory. The first of these theories is centered on Herzberg's theory [56], which maintains that job satisfaction is concentrated in two factors: hygienic and motivational [57]. The second mentions that the quality of workers' motivation in work teams depends on the satisfaction of three psychological needs: autonomy, competence and relationship [58]. The third evaluates the degree of support that employees perceive to have to carry out their work, the recognition they receive for their contributions and the company's concern for their well-being [59]. Regarding this last theory, previous studies have found that it is important for companies to focus on the individual strengths of younger employees, considering that they could establish their work identities based on the organizational support theory [60], which is a practical implication for managers.

In the years 2020-2021, the role theory continues to dominate in the Web of Science, however, in Scopus this trend changed, positioning the two-factor theory as the first on the list. A document that was found and based on this theory was “Analysis of The Quality of the Employee-Bank Relationship in Urban and Rural Areas”, which studied perceptions of the effectiveness of teamwork and its relationship with general job satisfaction. This showed that the quality of work teams is important for bank employee satisfaction, in addition to other factors such as salary remuneration [61], which represents another practical implication found.

Table 6: Article Theories

	Source	All data		Total	2020	2021	Total
		Scopus	Wos		Scopus	Wos	
1	Theory of Roles	95	76	171	9	16	25
2	Two Factor Theory	40	41	81	13	12	25
3	Theory of Self-Determination	33	28	61	2	7	9
4	Theory of organizational support	38	22	60	8	4	12
5	Leadership Theory	26	28	54	6	7	13
6	Theory of Motivation	25	25	50	6	4	10
7	Theory of social exchange	22	11	33	2	2	4
8	Communication Theory	12	18	30	2	9	11
9	Teoría of Social Identity	18	8	26	3	2	5
10	Theory Y	18	4	22	5	2	7
11	Theory of the three needs	13	8	21	4	3	7
12	Theory of cooperation and Skills	8	13	21	1	2	3
13	Theory of Emotional Intelligence	3	8	11	1	2	3
14	Theory of Equity	4	6	10	0	2	2
15	Theory of affective events	2	7	9	0	2	2
16	Theory of social categorization	2	3	5	1	1	2
17	Psychological Contract Theory	1	1	2	0	0	0
18	Theory of the five dysfunctions	1	1	2	0	0	0
19	Theory of multiple intelligences	1	0	1	0	0	0
20	Structuralist Theory of Administration	1	0	1	0	0	0
21	Tomeo Theory	0	1	1	0	0	0
22	Social Cognitive Theory	0	1	1	0	0	0
23	Theory of Relative Privation	0	1	1	0	0	0
24	No theory	2	0	2	0	0	0
Total Articles		365	311	676	63	77	140

Source: Own elaboration.

V. CONCLUSIONS

It was highlighted that in the years of the Covid-19 health crisis, there was an evident growth in the number of articles published, since with the arrival of Covid-19 a relationship could be established between various factors that were generated from the pandemic period, directly with teamwork, compared to the volatile behavior that occurred in previous years. In global production, it was in North America where there was the greatest concentration of articles, with the United States being the main country that publishes on the subject, reaching 395 documents, of which Scopus is responsible for a large part of these.

The article with the highest number of citations, this one was published in Scopus with 777 citations in 2005, which demonstrated that cultivating a climate of teamwork makes employees capable of better stimulating exchanges between them. Likewise, the area of knowledge that stood out on both platforms was business, equivalent to 55% of all articles analyzed, this was maintained in the years of the pandemic.

The most relevant author who contributes with his publications to the topic and who stood out significantly above the rest, was Tjosvold D. who presented a volume of 16 documents, in addition to the highest h-index, which was 10 in Web of Science, as was also who obtained a wide network of co-citations, which significantly influenced the rest of the authors.

In the years 2020 and 2021, new researchers emerged who began to publish from this period, so there was a renewal and therefore an opportunity to write with new perspectives on teamwork, thus contributing new perspectives to scientific development about the topic.

Regarding the sources of the articles, in the two databases, the International Journal of Human Resource Management stood out in the Web of Science with 8 documents and an h-index of 7. Furthermore, considering the pandemic period, the journal that contributed to The two platforms with 8 articles is International Journal Of Environmental Research And Public Health with an h-index of 2 (Scopus) and 3 (Web of Science). On the other hand, Teamwork was one of the keywords that maintained the highest number of occurrences, both analyzing all the articles and also the pandemic period.

Among the latest findings, there are those articles classified according to their methodology, where the most used was the empirical methodology, reaching 73% between both databases. The above is supported, since these articles mainly use instruments such as surveys, questionnaires, case studies, interviews, field studies, among others, to test and affirm the hypotheses and objectives of the research. For 2020 and 2021, not only was this trend maintained, but it was consolidated, representing 80% of all scientific production of the period.

One of the most deficient areas in the study carried out is related to agriculture, where until before the pandemic only 4 publications in Scopus and 2 in the Web of Science were linked to research related to teamwork, in which pandemic period (2020-2021), a very significant increase occurs proportionally, since in each database, there are 2 new works published, this situation constitutes, therefore, a real opportunity for future scientific research works in this area.

Finally, when carrying out a detailed analysis of the theories on which the articles were based, the one that was used the most was the Role Theory, which is relevant since in every work team the members fulfill a very specific role to achieve in turn the goals and objectives of the group this theory led since it was the technical support of 26% of the documents in Scopus and 25% Web of Science. In times of Covid-19, the same Role Theory was maintained with 25 documents between the two platforms studied.

Given all the detailed analysis carried out, evidence was found that teamwork is a significant practice around the world, and even more so in developed countries, which is understood as a key skill to improve individual and global in the organizations and with this meet the objectives of the organizations. Several of the documents and authors studied gave the reason for the development of economies and companies precisely, the achievement of high-level teamwork.

In the study, the consequences that Covid-19 brought with it were seen; in fact, the work teams were seriously affected, so this became a challenge for both the organizations and the people who make it up, and they had to adapt to the changes suddenly, as well as knowing how to overcome the different obstacles that arise, in order to cope with the situation in the best way and achieve success. As a result of this, during this period, there were new perspectives and ideas to address this issue. Despite how difficult the work in the pandemic was, it was observed that in the conclusions of several articles there was a recognition that thanks to Covid -19, teamwork was strongly reinforced and especially in those organizations that were successful in developing remote work, in which the performance of the teams was based on non-face-to-face work was essential.

This research is left as a seminal contribution to the international scientific community, serving as a guide for future researchers who wish to explore the topic and also for the decision-making of those organizations that try to implement teamwork every day, having now the bases of all scientific development on the subject, in a single working document. It is recommended for future research to reinforce a topic that is very little worked on and that is to focus on the evaluation of the individual performance of the members, within the work team. Additionally, a great absence of specific comparative research at the company level was observed industries and countries, comparative evidence on the subject is very scarce.

This research had two limitations: first, the coverage bias of Scopus and Web of Science, because these two databases do not represent the complete universe of knowledge on the topic, considering that there is research that contributes to this, but is outside these databases. Secondly, this topic has been explored using performance metrics, software management, and other tools, making it a complex topic, which may have led to omissions in the reviewed literature. We propose that future research mitigate these limitations by selecting documents from databases such as Scielo, Redalyc, EBSCO, Taylor and Francis, Emerald, and Sage, to make broader comparisons, showing research results achieved in more specific contexts not visible in Scopus and Web of Science. Furthermore, future research should focus on contextualizing the search for teamwork research results, clarifying the area of team performance, whether involving remote, virtual, or in-person work environments.

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VII. REFERENCES

- [1] J. Montes, and F. Moreno, "Modelo de Técnicas de Trabajo en Equipo", *Conciencia Tecnológica*, no. 33, pp. 26-30, Jun. 2007.
- [2] J. Castaño, A. Lanzas, and M. López, "Estrategia organizacional orientada al logro de resultados mediante el trabajo en equipo", *Scientia et Technica*, vol. 3, no. 35, pp. 369-373, Jan. 2007.
- [3] C. Cardona, and J. Trejos, "Qualitative study of experiential learning for organizational work teams", *Revista de Ciencias Sociales*, vol. 26, no. 3, pp. 71-82, Jul. 2020, doi: [10.31876/rcs.v26i3.33232](https://doi.org/10.31876/rcs.v26i3.33232).
- [4] A. Gómez, and H. Acosta, "Acerca del trabajo en grupos o equipos", *Acimed*, vol. 11, no. 6, Dec. 2003.
- [5] H. Koontz, H. Weihrich, and M. Cannice, "Administration. A global and business perspective". McGraw-Hill, 2012.

- [6] International Labor Organization, "COVID-19 and the world of work". ILO Observatory. [Online]. Available: <https://www.ilo.org/es/resource/brief/observatorio-de-la-oit-la-covid-19-y-el-mundo-del-trabajo-8a-edicion>. [Accessed: October 27, 2021].
- [7] Forbes, "Leadership and teamwork in times of crisis". [Online]. Available: <https://forbes.co/2020/06/05/capital-humano/liderazgo-y-trabajo-en-equipo-en-tiempos-de-crisis/>. [Accessed: June 5, 2020].
- [8] F. Romani, C. Huamani, and G. González, "Estudios bibliométricos como línea de investigación en las Ciencias Biomédicas: una aproximación para el pregrado", CIMEL Ciencia e Investigación Médica Estudiantil Latinoamericana, vol. 16, no. 1, pp. 52-62, Jun. 2011.
- [9] S. Ochoa, "La cultura organizacional en el siglo xxi: un estudio bibliométrico de WOS", Revista Interciencia, vol. 47, no. 3, pp. 92-99, Mar. 2022.
- [10] L. Michan, and I. Muñoz, "Cienciometría para ciencias médicas: definiciones, aplicaciones y perspectivas", Investigación en Educación Médica, vol. 2, no. 6, pp. 100-106, Jun. 2013, doi: [10.1016/S2007-5057\(13\)72694-2](https://doi.org/10.1016/S2007-5057(13)72694-2).
- [11] M. Llerena, M. Arévalo, and J. Ávila. "Bibliometric indicators: origin, definition and scientific applications in Ecuador", Entrepreneurial Spirit TES, vol. 5, no. 1, pp. 130-153, Jan. 2021, doi: [10.33970/eetes.v5.n1.2021.253](https://doi.org/10.33970/eetes.v5.n1.2021.253).
- [12] H. Molina, "El desarrollo organizacional como facilitador del cambio", Estudios Gerenciales, no. 77, pp. 13-25, Dec. 2000.
- [13] M. Mantilla, and D. García, "Trabajo en equipos autodirigidos: Competencias personales y conductas necesarias para su éxito", Revista Venezolana de Gerencia, vol. 15, no. 49, pp. 51-71, May. 2010, doi: [10.37960/revista.v15i49.10557](https://doi.org/10.37960/revista.v15i49.10557).
- [14] J. Sánchez, "Teamwork Fundamentals for Work Teams". McGraw-Hill, 2006.
- [15] E. Ander-Egg, and M. J. Aguilar, "Team work". Progreso Editorial, 2001.
- [16] R. Pacheco, "Competencias clave para la comunicación organizacional", Competencias clave para la comunicación organizacional, no. 90, pp. 70-75, Jun. 2005.
- [17] J. R. Katzenbach, and D. K. Smith, "The Discipline of Teams", Harvard Business Review, Apr. 1993. [Online]. Available: <https://hbr.org/1993/03/the-discipline-of-teams-2>.
- [18] I. Chiavenato, "Human resources management: The human capital of organizations". McGraw-Hill, 2011.
- [19] P. Cardona, and H. Wilkinson, "Team work". IESE Business School, Navarra University, Dec. 2006. [Online]. Available: <https://arodi.yolasite.com/resources/Trabajo%20en%20equipo-IESE.pdf>.
- [20] I. Rodríguez, "El modelo de trabajo en equipo", Revista Española de Drogodependencias, vol. 33, no. 4, pp. 241-255, Dec. 2008.
- [21] A. Ramírez, "La cirugía como una sinfonía. Un proyecto para el trabajo en equipo y coordinado", Rev. Colomb. Cir., vol. 35, no.4, 550-552, Oct. 2020, doi: [10.30944/20117582.673](https://doi.org/10.30944/20117582.673).
- [22] S. Stough, S. Eom, and J. Buckenmyer, "Virtual teaming: a strategy for moving your organization into the new millennium", Industrial Management & Data Systems, vol. 100, no. 8, pp. 370-378, Nov. 2000, doi: [10.1108/02635570010353857](https://doi.org/10.1108/02635570010353857).
- [23] R. Schumann, and H. Luczak, "Participation in the design of product-oriented work groups", International Journal of Industrial Ergonomics, vol. 17, no. 5, pp. 399-409, May. 1996, doi: [10.1016/0169-8141\(94\)00117-0](https://doi.org/10.1016/0169-8141(94)00117-0).
- [24] M. Paredes-Saavedra, M. Vallejos, S. Huanchuire-Vega, W.C. Morales-García, and L.A. Geraldo-Campos, "Work Team Effectiveness: Importance of Organizational Culture, Work Climate, Leadership, Creative Synergy, and Emotional Intelligence in University Employees", Adm. Sci., vol. 14, no. 11, pp. 1-25, doi: [10.3390/admsci14110280](https://doi.org/10.3390/admsci14110280).
- [25] F. Fraccaroli, M. Sverke, A. L. Friedrich, and D. Ulber, "Why Are We in a Team? Effects of Teamwork and How to Enhance Team Effectiveness". In: An Introduction to Work and Organizational Psychology (eds, N. Chmiel, F. Fraccaroli and M. Sverke), 2017, doi: [10.1002/9781119168058.ch12](https://doi.org/10.1002/9781119168058.ch12).
- [26] C. A. Montoya, and M. R. Boyero, "The human resource management as a key element and quality competitiveness organizacional", Revista Científica "Visión de Futuro", vol. 20, no. 2, pp. 21-37, Jun. 2016.
- [27] J. Cao, and M. Hamori, "The impact of developmental job experience on job performance: The importance of team context", Human Resource Management, vol. 62, no. 6, pp. 901-916, May. 2023, doi: [10.1002/hrm.22170](https://doi.org/10.1002/hrm.22170).
- [28] J. R. Katzenbach, "Teamwork: Advantages and difficulties". Granica Editorial, 2000.
- [29] A. Carvajal, "Teorías y modelos: formas de representación de la realidad", Revista Comunicación, vol. 12, no. 1, pp. 1-14, Mar. 2013, doi: [10.18845/rc.v12i1.1212](https://doi.org/10.18845/rc.v12i1.1212).
- [30] W. Santillan, "El teletrabajo en el COVID-19", CienciAmérica, vol. 9, no. 2, pp. 65-76, May. 2020, doi: [10.33210/ca.v9i2.289](https://doi.org/10.33210/ca.v9i2.289).
- [31] M. Segbenya, and E. N. A. Okorley, "Effect of Teleworking on Working Conditions of Workers: A Post-COVID-19 Lockdown Evaluation", Human Behavior and Emerging Technologies, 4562263, pp. 1-14, Jul. 2022, doi: [10.1155/2022/4562263](https://doi.org/10.1155/2022/4562263).
- [32] M. Klostermann, G. Ontrup, L. Thomaschewski, and A. Kluge, "Something Old or Something New? An Empirical Study on the Instant Adjustment to Virtual Teamwork During COVID-19", Zeitschrift Fur Arbeits-und Organisations-psychologie A&O, vol. 65, no. 4, pp. 215-230, Jan. 2021, doi: [10.1026/0932-4089/a000368](https://doi.org/10.1026/0932-4089/a000368).
- [33] S. Mysirlaki, and F. Paraskeva, "Virtual Team Effectiveness: Insights from the Virtual World Teams of Massively Multiplayer Online Games", J. Ldrship. Studies, vol. 13, pp. 36-55, Feb. 2019, doi: [10.1002/jls.21608](https://doi.org/10.1002/jls.21608).
- [34] J. K. Chen, and T. Sriphon, "Perspective on COVID-19 Pandemic Factors Impacting Organizational Leadership", Sustainability, vol. 13, no. 6, 3230, Mar. 2021, doi: [10.3390/su13063230](https://doi.org/10.3390/su13063230).
- [35] V. Orengo, A. Zornoza, and J. Peiró, "Management of virtual teams in work organizations: Some inputs from research", Papers of the Psychologist, vol. 32, no. 1, pp. 82-93, Apr. 2011.
- [36] A. Guazzini, E. Guidi, C. Cecchini, and E. Yoneki, "Collaborative Facilitation and Collaborative Inhibition in Virtual Environments", Future Internet, vol. 12, no. 7, pp. 118, Jul. 2020, doi: [10.3390/fi12070118](https://doi.org/10.3390/fi12070118).
- [37] F. Siebdrat, M. Hoegl, and H. Ernst, "How to lead virtual teams". Harvard Deusto Business Review, no. 187, 2010. [Online]. Available: <https://www.harvard-deusto.com/como-dirigir-equipos-virtuales>.
- [38] C. Peifer, A. Pollak, O. Flak, A. Pyszka, M. A. Nisar, M. T. Irshad, M. Grzegorzec, B. Kordyaka and B. Kozusznik, "The Symphony of Team Flow in Virtual Teams. Using Artificial Intelligence for Its Recognition and Promotion", Frontiers in Psychology, vol. 12, pp. 1-14, Sep. 2021, doi: [10.3389/fpsyg.2021.697093](https://doi.org/10.3389/fpsyg.2021.697093).
- [39] P. Bellis, D. Trabucchi, T. Buganza, and R. Verganti, "How do human relationships change in the digital environment after COVID-19 pandemic? The road towards agility", European Journal of Innovation Management, vol. 25, no. 6, pp. 821-849, Jun. 2022, doi: [10.1108/EJIM-02-2022-0093](https://doi.org/10.1108/EJIM-02-2022-0093).
- [40] S. López, S. Castellanos, M. López, and J. Hernández, "Bibliometría: una herramienta eficaz para evaluar la actividad científica de posgrado", MediSur, vol. 7, no. 4, pp. 59-62, Aug. 2009.

- [41] J. S. Riaño, and D. A. Camargo, “Liderazgo transformacional en el sector financiero: un análisis bibliométrico”, *Clio América*, vol. 18, no. 36, Dec. 2024, doi: [10.21676/23897848.5146](https://doi.org/10.21676/23897848.5146).
- [42] R. Hernández, C. Fernández, and P. Baptista, “Investigation methodology”. McGraw-Hill, 2010.
- [43] Spanish Foundation for Science and Technology. “Scopus database”. [Online]. Available: <https://www.recursoscientificos.fecyt.es/licencias/productos-contratados/scopus> [Accessed: March 1, 2021].
- [44] G. O. Chaviano, “Evaluation and classification of scientific journals: reflections on challenges and perspectives for Latin America”, *Revista Lasallista De Investigación*, vol. 15, no. 1, pp. 166-179, Nov. 2018, doi: [10.22507/rli.v15n1a12](https://doi.org/10.22507/rli.v15n1a12).
- [45] B. Hernández, “Software VOS Viewer Bibliometrics”. [Online]. Available: <https://www.investigayeduca.com/software-vosviewer-bibliometria/> [Accessed: December 22, 2018].
- [46] L. E. Ruiz, D. A. Camargo and O. Cardona, “Responsabilidad social empresarial y desempeño financiero: un análisis bibliométrico”, *Criterio Libre*, vol. 18, no. 32, pp. 201-218, Dec. 2020, doi: [10.18041/1900-0642/criteriolibre.2020v18n32.7116](https://doi.org/10.18041/1900-0642/criteriolibre.2020v18n32.7116).
- [47] J. Ardanuy, J., “Breve introducción a la bibliometría”. Barcelona University, 2012. [Online]. Available: <http://diposit.ub.edu/dspace/bitstream/2445/30962/1/breve%20introduccion%20bibliometria.pdf>.
- [48] Taylor & Francis Online, “The International Journal of Human Resource Management: Aims and scope”. 2021. [Online]. Available: <https://www.tandfonline.com/action/journalInformation?show=aimsScope&journalCode=rjih20>.
- [49] Emerald Publishing, “Personnel Review: Aims & scope”. 2021. [Online]. Available: <https://www.emeraldgrouppublishing.com/journal/pr>.
- [50] J. Díaz, “El índice H: una forma objetiva de evaluar la producción científica de un investigador”, *Revista de la Facultad de Medicina Veterinaria y de Zootecnia*, vol. 61, no. 2, pp. 9-10, Aug. 2014.
- [51] J. E. Hirsch, “An index to quantify an individual's scientific research output”, *Proc. Natl. Acad. Sci.*, vol. 102, no. 46, pp. 16569-16572, Nov. 2005, doi: [10.1073/pnas.0507655102](https://doi.org/10.1073/pnas.0507655102).
- [52] I. Otache and R. Mahmood, “Entrepreneurial Orientation and Performance of Nigerian Banks: The Mediating Effect of Teamwork”, *Mediterranean Journal of Social Sciences*, vol. 6, no. 3, pp. 406-414, May. 2015, doi: [10.5901/mjss.2015.v6n3p406](https://doi.org/10.5901/mjss.2015.v6n3p406).
- [53] N. Berber, A. Slavić and M. Aleksić, “Relationship between Perceived Teamwork Effectiveness and Team Performance in Banking Sector of Serbia”, *Sustainability*, vol. 12, no. 20, pp. 1-15, Oct. 2020, doi: [10.3390/su12208753](https://doi.org/10.3390/su12208753).
- [54] H. Pluut, A. M. Flestea and P. L. Curşeu, “Multiple team membership: A demand or resource for employees?”, *Group Dynamics: Theory, Research, and Practice*, vol. 18, no. 4, pp. 333-348, Jan. 2014, doi: [10.1037/gdn0000016](https://doi.org/10.1037/gdn0000016).
- [55] M. Rishani, M. E. Schouten, and I. J. Hoever, “Navigating multiple team membership: A review and redirection of its influence on effectiveness outcomes”, *Social and Personality Psychology Compass*, e12899, Oct. 2024, doi: [10.1111/spc3.12899](https://doi.org/10.1111/spc3.12899).
- [56] F. Herzberg, B. Mausner and B. B. Snyderman, “The Motivation to Work. New Brunswick”. Transaction Publishers, 1959.
- [57] G. Peramatzis and M. Galanakis, “Herzberg’s Motivation Theory in Workplace”, *Psychology Research*, vol. 12, no. 12, pp. 971-978, Dec. 2022, doi: [10.17265/2159-5542/2022.12.009](https://doi.org/10.17265/2159-5542/2022.12.009).
- [58] E. L. Deci and R. M. Ryan, “The ‘what’ and ‘why’ of goal pursuits: Human needs and the self-determination of behavior”, *Psychological Inquiry*, vol. 11, no. 4, pp. 227-268, Nov. 2009, doi: [10.1207/S15327965PLI1104_01](https://doi.org/10.1207/S15327965PLI1104_01).
- [59] B. E. Baran, L. R. Shanock and L. R. Miller, “Advancing Organizational Support Theory into the Twenty-First Century World of Work”, *J Bus Psychol*, vol. 27, pp. 123-147, Jun. 2012, doi: [10.1007/s10869-011-9236-3](https://doi.org/10.1007/s10869-011-9236-3).
- [60] M. C. Meyers, D. Kooij, B. Kroon, R. de Reuver and M. van Woerkom, “Organizational Support for Strengths Use, Work Engagement, and Contextual Performance: The Moderating Role of Age”, *Applied Research Quality Life*, vol. 15, pp. 485-502, Apr. 2020, doi: [10.1007/s11482-018-9702-4](https://doi.org/10.1007/s11482-018-9702-4).
- [61] S. Lekić, J. Vapa-Tankosić, S. Mandić, J. Rajaković-Mijailović, N. Lekić and J. Mijailović, “Analysis of the Quality of the Employee-Bank Relationship in Urban and Rural Areas”, *Sustainability*, vol. 12, no. 13, pp. 1-22, Jul. 2020, doi: [10.3390/su12135448](https://doi.org/10.3390/su12135448).