

Virtualization of judicial proceedings: a bibliometric analysis

The present work brings a study of bibliometric analysis and the perception of servants in relation to teleworking, addressed in the theme, aiming to insert the importance of sustainable public policies for society, being crucial to invest in practices, which enable greater support for social demands, without, however, compromising environmental resources. Following this line of reasoning, the Court of Justice of Pernambuco (TJPE), a public agency, which receives and issues the most diverse judicial documents in the state, started the process of migrating from physical to digital processes, in order to adapt to more sustainable management practices. It is through this bias that the research aims to elucidate the importance of process virtualization, as a sustainable alternative to physical means, which has already been implemented in the TJPE, seeking to quantify, in terms of material economy, the real advantages brought by computerization, within the scope of a public agency of Justice in order to solving the problem of the untimeliness of the judicial protection, since the extinction of the paper is a significant advance for the improvement of the jurisdictional provision, aiming to verify if the recent changes in the process that represent the beginning of a cultural change that supports a higher quality of judicial provision or if they just represent an improvement in the speed of the process. The present carries out a review in the literature of a focal approach, with reading of published material, books, articles and others, in this sense, based on the survey and analysis of scientific articles, the results showed a trend of growth in the numbers of published articles, the which reveals a concern to deepen the reflection on this theme. In the textual analysis of the consulted publications, he highlighted the use of words; eJustice; Electronic process, telework, according to the studies analyzed. Bearing in mind the results, studies on the subject are an area that must be analyzed and studied to better understand judicial processes. Followed by data collection encompassing data collection from the TJPE servers with a research application that is based on data collection through a questionnaire, seeking to identify any transformation in the legal culture impacted by the use of new technology.

Keywords: eJustice; Electronic process; Teleworking.

Virtualização de processos judiciais: uma análise bibliométrica

O presente trabalho traz um estudo de análise bibliométrica e a percepção dos servidores em relação ao teletrabalho, abordado no tema, visando inserir a importância de políticas públicas sustentáveis para a sociedade, sendo fundamental investir em práticas, que viabilizem maior suporte às demandas sociais, sem, no entanto, comprometer os recursos ambientais. Seguindo essa linha de raciocínio, o Tribunal de Justiça de Pernambuco (TJPE), órgão público que recebe e emite as mais diversas peças judiciais do estado, iniciou o processo de migração dos processos físicos para os digitais, a fim de se adequar a processos mais práticas de manejo sustentável. É por esse viés que a pesquisa visa elucidar a importância da virtualização de processos, como alternativa sustentável aos meios físicos, que já vem sendo implementada no TJPE, buscando quantificar, em termos de economia material, as reais vantagens trazidas pela informatização, no âmbito de órgão público de Justiça a fim de solucionar o problema da intempestividade da tutela jurisdicional, pois a extinção do ofício é um avanço significativo para o aperfeiçoamento da prestação jurisdicional, visando verificar se as recentes alterações na os processos que representam o início de uma mudança cultural que sustente uma maior qualidade da prestação jurisdicional ou se apenas representam uma melhoria na celeridade do processo. O presente realiza uma revisão na literatura de abordagem focal, com leitura de material publicado, livros, artigos e outros, neste sentido, com base no levantamento e análise de artigos científicos, os resultados mostraram uma tendência de crescimento nos números de artigos publicados, o que revela uma preocupação em aprofundar a reflexão sobre esta temática. Na análise textual das publicações consultadas, destacou o uso de palavras; Justiça Eletrônica; Processo eletrônico, teletrabalho, segundo os estudos analisados. Tendo em vista os resultados, os estudos sobre o tema são uma área que deve ser analisada e estudada para melhor compreensão dos processos judiciais. Seguiu-se a coleta de dados englobando a coleta de dados dos servidores do TJPE com aplicação de pesquisa que se baseia na coleta de dados por meio de questionário, buscando identificar qualquer transformação na cultura jurídica impactada pelo uso de novas tecnologias.


Palavras-chave: Justiça Eletrônica; Processamento eletrônico; Teletrabalho.


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INTRODUCTION

Debates on global socio-environmental awareness have been gaining more and more visibility, enabling broad discussions on the finiteness of environmental resources and the search for alternatives for the skillful renewal of society's consumption needs. Thus, pressured by the scarcity of natural resources and its disastrous consequences for life on our planet, civil society, governments and other organizations converge on the debate at the international level, bearing in mind to find solutions to environmental issues. For that matter, we can mention the United Nations Conference on the Environment (ECO92), for example, which, among others, proposes to find ways to plan and build a sustainable global society.

At the United Nations Conference on the Environment (ECO-92), the global Agenda 21 emerged, which is an essential planning tool for the construction of sustainable societies in different countries, reconciling different methods of environmental protection, social justice and economic efficiency (NOVAES, 1992).

ECO-92 has become an icon in discussions on sustainable development, because it has given due emphasis to the need for sustainability in all human actions that are related to the environment, as the guarantee of present life and future generations depends on it. As is well known, the idea of Sustainable Development was created in 1987, five years before the Rio-92 Conference, and is included in the Brundtland Report prepared by the World Commission on Environment and Development belonging to the UN. However, for its implementation, in a comprehensive and full way, there is still something to be expected, and it depends on the interests of society and governments, and on a massive environmental education program, among other measures.

Sustainable development ensures an ecologically balanced environment, as a good for the common use of the people and essential to life quality, giving the public power and the community the duty to defend and preserve it. Bearing this in mind, public institutions improve their management practices, in order to achieve excellence in terms of sustainability in their actions, even more so now, with the technological advances of the last decades in the most diverse areas of human knowledge and, specifically, regarding information and communication technologies, with the advent of the Internet. Thus, joining the principles of Public Administration to the virtual world.

Seeking to make the Public Administration always up to date, and at the forefront of sustainable management, the Environmental Agenda in Public Administration (A3P) was created, which is a program of the Ministry of the Environment, made official by Ordinance nº 510/2002, with the purpose of helping public managers to assume socio-environmental responsibility, adopting sustainable practices in all spheres of Public Administration, seeking a new culture of institutional behavior bearing in mind to reduce social and environmental impacts (COGO et al., 2012). The Agenda bases its actions on the following principles: Rethink, Reduce, Reuse, Recycle and Refuse to consume products that generate significant negative socio-environmental impacts.

Inspired by these sustainable principles and the permanent modernization of Public Administration

services, the Electronic Judicial Process (PJe) was created, through which the receipt and storage of information from the procedural documents is processed, which translates into economy, speed and configures as a sustainable practice, as it is only virtual, without waste of expedient materials such as paper, among others (SOVERAL et al., 2019). Thus, with the implementation of the electronic judicial process, it is possible to simplify a new routine in the Judiciary.

The agility in the information retrieval, creation of copies, dissemination and sharing of files, etc., imply in the rationalization of materials, which were previously used for the elaboration of documents, mainly, in the case of justice agencies, which have a very high demand of processes running continuously. However, this change was only possible thanks to the implementation of Law No. 11,419/2006, which made it possible to use electronic means for processing legal procedures.

Public agencies are of utmost importance for serving society, and it is crucial to invest in practices that enable greater support for social demands, without, however, compromising environmental resources. Following this line of reasoning, the Court of Justice of Pernambuco (TJPE), a public body, which receives and issues the most diverse judicial documents in the state, started the process of migrating from physical to digital processes, in order to adapt to more sustainable management practices. In February 2020, of the 2.4 million cases of the judicial unit, about 810 thousand were still physical. The forecast was that, in September 2020, all TJPE processes would be digitized.

In the period from 2020 to February 2022, 127,939 physical processes had been virtualized, with the expected deadline to complete migration of the Electronic Processes, until the 2024 year, according to data from the Executive Committee for Migration from the physical collection to the Pje, in which points such as logistics in the digitization process were discussed; storage conditions of the physical process to be digitized; infrastructure necessary to speed up the digitization of processes; and calendar in the delivery of digitized cases to the TJPE as quickly as possible, and finish before the scheduled deadline, which is the goal of the board of directors, which brings a more agile and effective Judiciary, going in search for solutions in the difficulties for the complete PJe virtualization (VELOSO, 2022). The general objective is to carry out bibliometric analysis in relation to telework, within the scope of the Court of Justice of Pernambuco.

THEORETICAL REVIEW

The importance of sustainable public policies for society

Talking about sustainable Public Policies necessarily requires a previous reflection on the environment. The concept attributed to the environment normally found in Portuguese dictionaries is: 'it is what surrounds or involves living beings or things, on all sides'. For Law nº 6.938/81, which provides for the National Environmental Policy, the environment is: 'the set of conditions, laws, influences and interactions of a physical, chemical, biological nature, which allows, shelters and governs life in all its forms'. For the National Council for the Environment (CONAMA) environment is 'the set of conditions, laws, influences and interactions of a physical, chemical, biological, social, cultural and urban order that allows, shelters and governs life in all its forms' (BRAZIL, 2002).

On the concept of environment for ISO 14001, from the perspective of environmental management: 'it is the surroundings in which an organization operates, including air, water, soil, natural resources, flora, fauna, human beings and their interrelationships'. What can be observed about these concepts of the environment is that they all converge on the same idea and, most importantly: it needs to be taken care of, preserved, because life depends on it. Thus, all human actions must be permeated by sustainability - guarantee of environmental preservation.

For most scholars, there are four categories of environment: natural; artificial; cultural; and from work. The first is the natural environment, which refers to natural resources such as water, land, air, vegetation and animals. The artificial is the one built by man, such as the altered environment (streets, squares, green areas). The third category is nothing more than the heritage of the place, whether historical, artistic, tourist, etc. And finally, the working environment, anyone who relates to the work environment. The understanding that work is a continuation of the artificial is accepted (AMADO, 2020).

Public sustainability policies are essential for ensuring a healthy environment and for its preservation. These Public Policies are extremely important for everyone, and are in line with the constitutional guarantee of article 225 of the 1988 Federal Constitution. For Marques (2020):

The axiology of this right, in turn, acquires another dimension greater than simply a constitutionalized fundamental right, as it assumes an evaluative burden of human right because the intrinsic relationship between the ecological balance of the environment and the quality of life has a character extensive right to life. It is, therefore, a transcendent right that concerns everyone indiscriminately and ensuring this environmental protection is precisely to give effectiveness to the principle of human dignity and, consequently, guarantee the existence of the human being himself.

The institutionalization of sustainable development represents the desire of society that established in the legal system the notion that the quality of the environment is something indeclinable for the dignity of human development realization, and which is solidified in art. 1, item III, of the Federal Constitution, regarding the principle of human dignity, and in art. 3, item I, in relation to the construction of a free, fair and solidary society.

The implementation of sustainability in public management is an arduous mission, as it involves several factors and values in the decision-making moment of action. Acting in a sustainable manner is a difficult task, as it is about being able to combine the continuity of the social, political and economic development of the State without causing damage to the life quality of the future generation (FOLADORI et al., 2018). Therefore, aside from guiding public policies from the perspective of the scope of human dignity and solidarity, justice is also achieved. Thus, it is seen that the construction of a citizenship based on environmentalism, people develop the ability to critically reflect on the causes and effects of their actions and seek the best alternatives consistent with the reduction of negative impacts on nature and harmonization of society (SARAIVA et al., 2019).

According to the aforementioned authors, consumerism and irresponsibility in the final destination of products, waste, are replaced by a thoughtful care of what represents the best for society, for the environment and for the economy, simultaneously. However, this same sustainable posture is necessary in

the most diverse layers of society, including the actions of governments, sustainable Public Policies (SARAIVA et al., 2019).

Sustainable public policies are essential tools to guarantee the protection of the environment, where people are inserted, considering that the human being is inseparable from nature and environmental impacts affect individuals directly or indirectly. In this reasoning, it can be said that determining which sustainable measures should be put into practice in an institution is strictly related to the pursuit of excellence in public management, quality, rationalization and sustainability. Well, this is the objective of a public policy: to promote the environment in a healthy and ecologically balanced perspective (DESLATTE, 2015). And it is in this perspective that the managers of the Courts act, guided by the regulation of the National Council of Justice (CNJ) assuming this socio-environmental stance.

Millennium Development Goals (MDGs)

In 2000, eight major Millennium Development Goals (MDGs) were outlined by 191 UN member countries. Such objectives aimed at specific actions. The Resolution nº 55/2 of the UN General Assembly, was configured as a founding mark of the MDGs, receiving the name of 'Declaration of the Millennium of the United Nations'. This resolution was unanimously adopted by heads of state and representatives of 191 countries, during the so-called 'United Nations Millennium Summit', the 55th session of the General Assembly, from 6 to 8 September 2000, at the UN headquarters, in New York, United States (ROMA, 2019). According to the document, the main challenge to be faced was to ensure that globalization became a positive force for all peoples of the world, since its benefits were unequally shared by nations, with developing countries and economies in transition, great difficulties to be overcome, in order to actually achieve the desired equity through the benefits of globalization. The MDGs had their governance, in Brazil, established through the Presidential Decree of October 31, 2003, which established the 'Technical Group for Monitoring the Millennium Development Goals and Objectives' (ROMA, 2019). According to the UN, one of the eight MDGs which this work refers to is number 7, which is to ensure quality of life and respect for the environment.

For each of the eight goals, global goals were established, totaling 21 goals, which were monitored through 60 indicators, allowing the progressive evaluation of each of the goals. The results obtained, nationally, were described in five National Monitoring Reports, prepared in partnership by several institutions of the federal government and agencies that are part of the UN System in Brazil. Given the expiration of the MDGs execution period in 2015, Rio+20 was held in 2012, the United Nations Conference on Sustainable Development, which resulted in the document 'The Future We Want', laying the foundations for a set of objectives and goals aimed at sustainable development: the Sustainable Development Goals (SDGs) (ROMA, 2019).

Sustainable Development Goals (SDGs)

In Brazil, the implementation of the SDGs was established through Decree No. 8,892, of October 27,

2016, which created the National Commission for Sustainable Development Goals (CNODS). In October 2017, CNODS published its Action Plan, which provided, as part of the strategy for the implementation of the 2030 Brazil Agenda, to adapt the 169 goals of the SDGs and their respective global indicators to the Brazilian reality.

Following the same reasoning as the MDGs, the SDGs have a period of 15 years to be completed, ending in 2030.

Agenda 21, the MDGs and the SDGs have several points in common, and among them the quest to ensure sustainable consumption stands out: Agenda 21 explicitly refers to the SDGs in its chapter 12. Responsible consumption and production.

Kondratiev cycles and Digitalization

Every document has its life cycle, which goes from acquisition to final destination - which can be kept or disposed of. The document exists because it is being useful to a service, company, or customer. Each stage of its life cycle calls for specific management and, for efficient document management, knowledge is required.

There may still be some confusion between custody and document management, but for a company that specializes in these services, these are very different functions.

Management is the administration of each stage of a document's life cycle, which has different uses and needs during processing. Knowing the document life cycle is essential for efficient management. Thus, it is possible to structure the appropriate document management, optimizing the processes.



Figure 1: Documents life cycle.

According to Figure 1, the document life cycle, despite having several stages, does not have a pre-established order. Another point is the steps may not happen in a linear fashion. That is, two or more steps can happen simultaneously.

Each document has its own life cycle, having its own sequence of steps and the way they occur. To know what the life cycle of a document is like, it is necessary to study it within the context of the company, so it is possible to map the order of the steps and whether they are linear or simultaneous.

However, regardless of which step it is, the query is always happening along with each of the other steps. See what each of these steps are, remembering that there is no pre-established order between them: Consultation; Acquisition; Registration; Localization; Processing; Destination; Recovery; Reuse.

To structure document management within the company, serving every need, knowledge is needed.

Thus, the entire document lifecycle is mapped, predicting future needs and meeting current ones.

RD's services attends everyone who needs to keep documents with quality and security, transforming physical spaces that were previously occupied with inadequate document archiving into a rational layout, generating internal cost reduction, as well as productivity improvement.

Some economists, such as Nikolai Kondratiev, also call supercycles, big waves, long waves, K waves or long economic cycles, statistically demonstrated the long wave cycles formed over time (MAFRA et al., 2017) Figure 2.



Figure 2: Kondratiev cycles. Source: Mafra et al. (2017).

The configuration accentuates in graphics the stability and economic growth, in which with each new cycle, the configuration changes, as was the case with England during the Industrial Revolution, and it is like that with the USA, after the First World War, which has been accumulating great growth. Even with the possible depletion to global growth, the US was at levels of full employment and economic growth.

The 1929 crisis is repeated in 2019, 2020 and 2021, as seen below: Growth of industrial production - The advancement of technology allowed a great increase in the production of goods; Drops in interest rates - With lower interest rates, investors took resources from the productive sectors to the stock exchange; Demand crisis - The Europe that recovered from the First World War reduces the level of consumption.

Kondratiev Waves is an economic theory explained in the most diverse courses in Economics. Even being specifically in this area, everyone should know it to better understand how the world and its economy work and understand what causes financial crises. Recession periods are inevitable and come after a period of economic boom. This cycle always happens and as seen, must be repeated several times.

“Justiça 4.0”

The ‘Programa Justiça 4.0 - Inovação e efetividade na realização da justiça para todos’ (Justice 4.0 Program - Innovation and effectiveness in achieving justice for all) is an initiative of the National Justice Council, which aims to provide access to justice through actions and projects for the collaborative use of products, which employ the use of technologies and artificial intelligence. The implementation of the 100% digital court, which enables the occurrence of hearings and other procedures that were previously mandatory in the forum, to take place virtually, the implementation of the virtual counter, the digital platform of the Judiciary, which integrates the different processing systems in a single platform used by the courts, the use of Artificial Intelligence, in the automated reading of decisions and petitions texts presented to the Justice, to perform repetitive tasks and optimize human work, among other implementations, are initiatives that aim

to increase the degree of automation of the judiciary, bearing in mind the progress of processes in a faster and more efficient way. These changes were accelerated by the Covid-19 pandemic, mainly due to social distancing, which was a driving factor for adapting, as much as possible, to teleworking.

METHODOLOGY

Research Location

Study area where the Court of Justice of Pernambuco is located - located at Praça da República - /Santo Antônio - Recife/PE zip code: 50040-160 (Figure 3). The work in question aims to approach the virtualization of Judicial Processes more precisely, an important simulation approach, since the development of a planning from sustainable indicators is an object of interest of science. Thus, according to the thematic axes, understanding the bibliometric analysis is relevant, as the result of the years demonstrates the dimension of this theme in virtualization, with a significant increase within the TJPE.



Figure 3: Court of Justice of Pernambuco.

Methodological steps

The research was based on a hybrid method configuration, a combination of qualitative and quantitative methods, in an exploratory structure, carried out through data collection, as well as observation and collection of specific information from the aforesaid work. The first stage covers the accomplishment of a qualitative phase, of an exploratory nature, through the collection of bibliographic data, legislation and information related to the research object.

Bibliometric Analysis

The bibliographic survey was carried out by approaching the focal theme. This method consists of reading published material (books, articles, and others), increasing the initial knowledge about the subject, as well as the determination of indicators for the development of the bibliometric study. Bibliometric analysis allows the researcher to approach the object of study, as well as allowing the statistical analysis of academic literature, from different perspectives (LIU et al., 2019; SOLÀ et al., 2019). This method employs a quantitative approach, which gives quality to the description, evaluation and monitoring of scientific production (ELLEGAARD et al., 2015). The main laws governing bibliometrics are focused on the scientific productivity of authors, of journals and on the productivity of journals and word frequency. The bibliometric

study is applicable to several areas of Science, commonly used to obtain indicators of scientific production, demonstrating the behavior, development and trend of a certain area of knowledge.

Data collection was carried out on March 29, 2022, using the Web of Science (WOS) database, searching for scientific documents published between 1990 and 2021, using the Capes Periodicals Portal platform. Indicators related to the themes of Virtualization, eJustice, Electronic Process were used, aiming to investigate how the scientific community has been dealing with this theme. The consultation was applied to the title, abstract and keywords, using the indicators 'teleworkers', 'telecommuting', 'process virtualization' and 'court'.

For the deepening of bibliometrics, 274 documents found on the Web of Science search site were used, a scientific database that gathers information about scientific studies, using the Boolean operators 'OR' and 'AND'

For the bibliometric analysis of the documents found related to the indicators researched, the *VOSviewer* software, developed by Van et al. (2010) was used, a free program used to build maps (clusters) based on networks, using data cluster mapping techniques. The *Vosviewer* software was used as a tool to build bibliometric networks for citation of documents, journals, co-authorship of authors and co-occurrence of keywords.

The analysis of the content of the scientific productions surveyed focused on The Court of Justice of Pernambuco, identifying aspects of research and current issues addressed, based on the history of publications. The global illustration of the methodology can be seen in Figure 4.

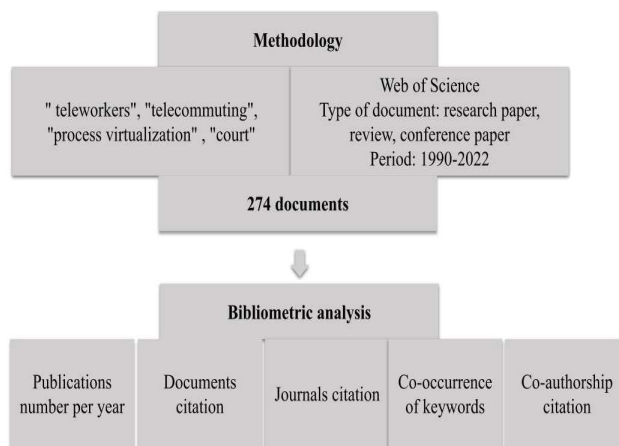


Figure 4: Flowchart of the methodology of bibliometric analysis.

RESULTS AND DISCUSSION

Bibliometric Analysis

It is possible to identify, through Figure 5, an increase in the number of publications on the topic 'telework'. The increase in academic interest in this area was probably intensified by the imminent need to adapt work environments to the new reality of social isolation that emerged amid the advent of covid-19, which took place around 2020.

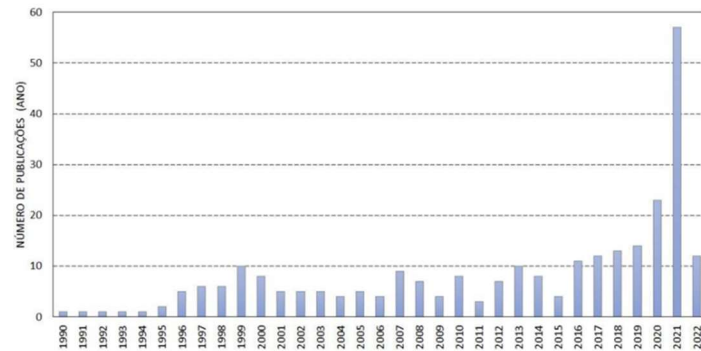


Figure 5: Teleworking publications from 1990 to 2021.

Scientific productions related to indicators of evolution of telework oscillated by stability, discrepant in relation to the 2020 year and reaching the maximum peak in the year 2021. In the 2022 year, until the month of March, 12 articles on the theme had been published in the 2021 year.

Bibliometric network of documents citations

Figure 6 shows the number of scientific publications registered in the Web of Science through the thematic axis of the study, reaching a total of 114 documents. Of this total, using the filter of 10 citations per document.

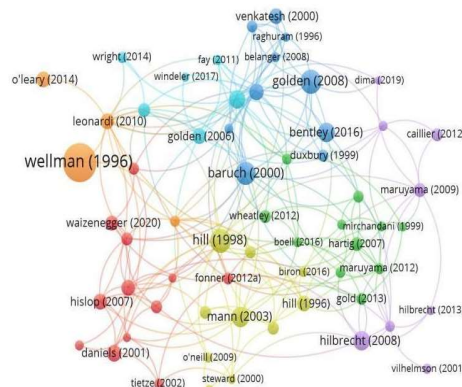


Figure 6: Documents citations.

Ranking of most cited documents were Wellman (1996), Golde (2008), Hill (1998), Baruch (2000) and Mann (2003) (Table 1). The most cited document was Wellman (1996), entitled “Computer Networks as Social Networks: Collaborative Work, Telework, and Virtual Community” belonging to Cluster 7, with 499 citations, published in the Annual Review of Sociology (Table 1). The second most cited document was by Golden (2008), entitled ‘The Impact of Professional Isolation on Teleworker Job Performance and Turnover Intentions: Does Time Spent Teleworking, Interacting Face-to-Face, or Having Access to Communication-Enhancing Technology Matter?’, cited 202 times, published Journal of Applied Psychology. The third most cited document was by Hill (1998) from Cluster 8, entitled “Influences of the virtual office on aspects of work and work/life balance” with 192 citations and published in the journal Personnel Psychology. The fourth most cited document was Baruch (2000), entitled “Teleworking: benefits and pitfalls as perceived by professionals and managers” with 181 citations and published in the New Technology Magazine, Work and Employment. The fifth most cited article was Mann (2003) entitled “The impact of teleworking: stress, emotions, and

health”, with 147 citations and published in the journal *New Technology, Work and Employment*.

Table 1: Ranking of most cited documents.

Ranking	Title	Author (year)	Citations number	Journal	Cluster
1º	Computer Networks as Social Networks: Collaborative Work, Telework, and Virtual Community	Wellman (1996)	499	Annual Review of Sociology	7
2º	The Impact of Professional Isolation on Teleworker Job Performance and Turnover Intentions: Does Time Spent Teleworking, Interacting Face-to-Face, or Having Access to Communication-Enhancing Technology Matter?	Golden (2008)	202	Journal of Applied Psychology	2
3º	Influences of the virtual office on aspects of work and work/life balance	Hill (1998)	192	Personnel Psychology	8
4º	Teleworking: benefits and pitfalls as perceived by professionals and managers	Baruch (2000)	181	New Technology, Work and Employment	2
5º	The psychological impact of teleworking: stress, emotions, and health	Mann (2003)	147	New Technology, Work and Employment	5

Rede bibliométrica de citação de revistas

The most important journals in the research area were new technology work and employment, journal of applied communication research and sustainability, shown in Figure 17 and Table 2.

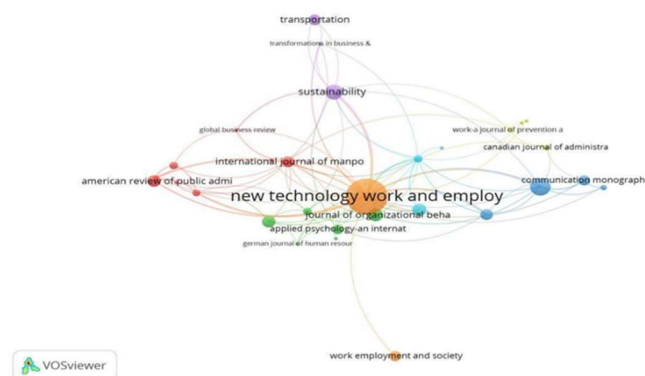


Figure 17: Journal Citations.

Regarding the analyzed publications, it is possible to observe that the minimum number of publications per journal was 1 and the maximum number was 18. The ‘**New technology work and employ**’ journal was the most used by researchers to develop a study in the area of telework, with 984 citations and 18 published documents (Cluster 7). The ‘journal of applied communication research’ ranked second with 240 citations and 3 published documents (Cluster 3). The third place highlighted was the journal ‘sustainability’ with 7 documents and 177 citations (Cluster 5), standing out as dominant publications directed to indicators relevant to the theme.

Table 2: Ranking of journal citations.

Ranking	Journal	Documents Number	Citations Number	Cluster
1º	new technology work and employment	18	984	7
2º	journal of applied communication research	3	240	3
3º	Sustainability	7	177	5

Bibliometric co-authorships network

The bibliometric co-authorship network was applied to analyze the authors' cooperation pattern, based on 274 documents, with contributions from 636 different authors, of which only 20 authors have a co-

authorship cooperation relationship in the studied research area (Figure 8).

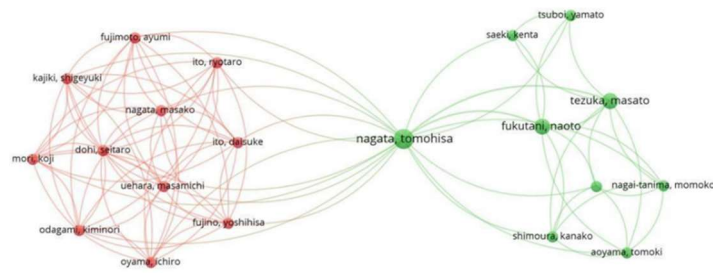


Figure 8: Co-authorships citations.

In Table 3, the co-authors who stood out the most in terms of number of documents and citations are listed, based on Figure 18, through the thematic axis of the study, were Tomohisa Nagata, Naoto Fukutani and Masato Tezuka.

Table 3: Ranking of co-authorships citation.

Ranking	Author	Documents number	Citations number	Cluster
1º	Nagata, Tomohisa	3	6	2
2º	Fukutani, Naoto	2	1	2
3º	Tezuka, Masato	2	1	2

Bibliometric keywords network

The most used keywords by the authors were identified and analyzed to classify the 274 documents that were part of the sample. Based on this analysis, the themes that arise most frequently in a given area stand out. The bibliometric map represented in Figure 19 groups the keywords into five. Clusters. The keywords with the highest frequency were ‘Telework’ (green cluster), Teleworking (red cluster), Telecommuting (green cluster) and ‘Covid’ (red cluster).

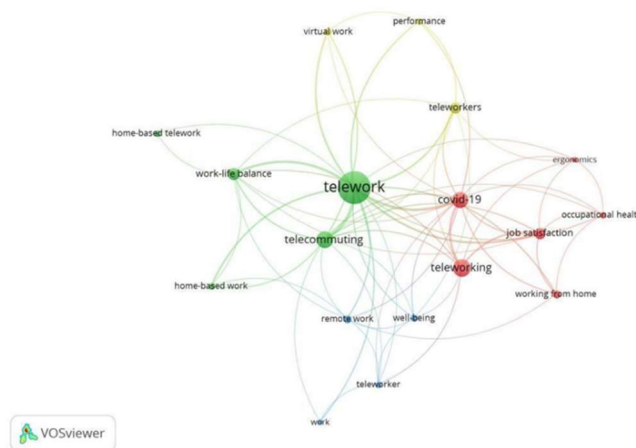


Figure 19: Co-occurrence citation.

Of the 274 documents, 692 keywords used by the authors were identified. Of these, 16 keywords appeared more than five times (Figure 19). Table 4 presents the keywords that had the highest frequency. The keyword ‘Telework’ occurred 114 times, being the most used word to summarize the main theme of the analyzed articles, followed by ‘Teleworking’ with 33 occurrences, ‘Telecommuting’ with 30 occurrences and ‘Covid-19’ with 28 occurrences.

Table 4: Ranking of keywords.

Ranking	Keywords	Frequency	Cluster
1º	Telework	114	2
2º	Teleworking	33	1
3º	Telecommuting	30	2
4º	Covid-19	28	1

The scientific community is currently researching teleworking, for which it used bibliometrics, identifying that teleworking has brought benefits, so that it will be a new trend in studies. It was possible to identify an increase in publications, since the academic interest in this area appears as an idea to minimize the impacts caused to the environment.

In the last two years, the scientific production on the subject has increased publications, and it can be observed that Wellman (1996) with 499 citations, Golden (2008) cited 202 times, Hill (1998) with 192 citations, Baruch (2000) with 181 and Mann (2003), were the ones that published the most about teleworking. The keywords indicate the direction of scientific productions on the topic addressed that will help to discover mechanisms that can improve performance by suggesting innovative practices.

CONCLUSIONS

The work in question aimed to address the perception of TJPE servers in relation to the implementation of telework. The adjustments were carried out due to the new reality brought by living with the Covid-19 pandemic, which devastated Brazil and the world. It is noteworthy at this point that this new work conformation took into account the reduction of risks inherent to work, through health, hygiene and safety standards. Thus, this type of guideline should be the path to follow at all times, especially in the case of a pandemic, taking into account both the server and the public interest in general.

It was possible to observe that in terms of productivity, preservation of the environment and sustainable development, the server's understanding was that teleworking brought benefits, which transcended the sphere of public administration and also contributed to the environment. This perspective was possible to be implemented, as a result of the virtualization of processes, which gave a range of possibilities to virtual work spaces due to the overcoming of the idea of rigid and delimited physical spaces of work.

Furthermore, there was the perception, propagation, and encouragement of environmental education, within the scope of the Court of Justice of Pernambuco, as a way of raising awareness and sensitization of servers for the use of natural resources, avoiding waste and unbridled consumption of paper, aiming at preservation of the environment. It was possible to observe technology as a means of facilitating advances and improvements to society, supporting from the simplest tasks to those of high complexity. The substitution of the physical medium for the digital one is already in full operation and tends to expand in the most diverse areas, allowing the execution of tasks in a much shorter time and in a more efficient way. Thus, the judiciary was inserted with the prospect of faster solutions, due to the high demand of the physical processes that were processed daily.

With this paradigm shift, the Court, through its servers, cooperate with the formation of a critical

citizen, with an ethical environmental posture, who rationally ascertained the importance of rationalization of resources by the public agency.

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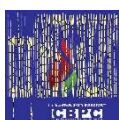
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