

The impact of the COVID-19 pandemic on the use of The Digital Library of Repsol

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ABSTRACT

The purpose of this paper is to analyse the impact of the recent COVID-19 pandemic on the use of The Digital Library (TDL), a tool created and managed by the Documentation & Library Service Department of Repsol, S.A. so that the Company's employees can have permanent access to the information they need to execute their daily work. The aim is to demonstrate the effectiveness of the measures taken during the pandemic to guarantee access to information for its users, as well as the digitalisation of its services. To do this, a bibliographical review of the sources of information that have served as a theoretical basis for its creation and a brief overview of its phases

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was made. Afterwards, a survey was carried out among employees from different countries and business areas to find out how much and how The Digital Library is used. Questions were asked considering the period before and after the start of the health crisis. The results of this study allow us to draw several positive conclusions, which indicate that the measures taken by the Department are in line with the needs of its users.

Keywords: The Digital Library, Repsol, COVID-19

El impacto de la pandemia de COVID-19 en el uso de La Biblioteca Digital de Repsol

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RESUMEN

El objetivo de este trabajo es analizar el impacto de la reciente pandemia de covid-19 en el uso de La Biblioteca Digital (TDL), una herramienta creada y gestionada por el Departamento de Documentación y Biblioteca de Repsol, S.A. para que los empleados de la Compañía puedan acceder en todo momento a la información que necesitan para desarrollar su trabajo diario. El fin es demostrar la eficacia de las medidas adoptadas durante la pandemia para garantizar el acceso a la información de sus usuarios, así como la implementación de la digitalización de sus servicios. Para ello, en primer lugar, se realizó una revisión bibliográfica de las fuentes de información que han servido de base teórica para su creación y una breve revisión de sus fases. Posteriormente, se realizó una encuesta entre los empleados de la empresa de diferentes países y áreas de negocio para conocer cuánto y cómo se utiliza La Biblioteca Digital. Las preguntas se formularon teniendo en cuenta el periodo anterior y posterior al inicio de la crisis sanitaria. Los resultados de este estudio permiten extraer varias conclusiones positivas, que indican que las medidas adoptadas por el Departamento se ajustan a las necesidades de sus usuarios.

Palabras clave: La Biblioteca Digital, Repsol, COVID-19

INTRODUCTION

Since the onset of the COVID-19 pandemic, all work sectors and industry environments have been challenged to take measures to ensure their flexibility and agility in reacting to the uncertainty and constant changes that led workers to adapt to the new conditions.

The total closure of physical spaces drove companies to seek alternatives to continue their work and to be able to provide their employees with the services they need to carry out their work, highlighting the digitisation process of both tasks. In the midst of this, libraries have demonstrated a great capacity to adapt their services to the digital environment.

This article analyses the specific case of the Repsol Digital Library, a service that was launched by the Company's Documentation and Library Service Department in 2018. After carrying out statistical studies on the use of the collections that this department makes available to its users from the beginning of its use and during confinement, which are briefly outlined to contextualise the results obtained, a new study has now been carried out to complete the overall perspective of the use of The Digital Library once the COVID-19 pandemic has ended. The aim is to determine the impact that the pandemic has had on the use of this service in order to find out whether the measures taken during this period have been effective.

Repsol's Documentation & Library Services Department

Since its creation in 1927, Repsol has played a key role in the energy sector in Spain. With the aspiration of becoming a leading brand with worldwide prestige and recognition, Repsol has been taking steps forward, extending its influence on all continents and becoming the largest Spanish oil and gas company.

As a leader in the Oil & Gas sector for the past 30 years, Repsol has demonstrated an outstanding capacity for fast adaptation to change. Nowadays, the Company continues to grow, with increasingly ambitious challenges that are reflected in the new 2021-2025 Strategic Plan. In this plan, Repsol is pledged to become a customer-centric, multi-energy company that is committed to innovation, strategic talent management, and new ways of working. Much of this development is based on the digitisation of all stages in the process of developing the energy of the future, promoting a data-driven culture within the organisation, thereby ensuring greater efficiency and closer customer relationships.

The magnitude and importance of Repsol allows us to state that its Documentation & Library Service Department contains the richest collection of hydrocarbon-sector publications in Spain.

Among all the initiatives carried out by the different areas of the Company, those of the Documentation & Library Service Department do not go unnoticed.

The main functions of this department are the selection, acquisition and cataloguing of information sources, including books, journals, and databases, among others.

Around the year 2015, an important project was carried out: the unification of the information sources and bibliographic collections of the entire Group, previously divided evenly throughout the country, into one single global service. All these collections would henceforth be managed by the Documentation & Library Services Department, based in Spain.

This fact promoted the urgent need to create a digital tool that would allow access to the collection from any location. In other words, a space needed to be created where information would be fully accessible to all the company's employees, regardless of the place from which it would be accessed. Therefore, the project for the creation of The Digital Library (TDL) was born.

The transformation of the Collection: becoming digital

In the midst of a digital transformation process, Repsol's Documentation & Library Services Department took important steps by putting into practice a "paperless" plan, the *e-policy* (2018). Society is transforming into an environment where information is primarily digital, and the library must respond to these new needs. In fact, both the physical and the digital can coexist if a common document management system is developed for both, where information can be easily retrieved regardless of its format (Anglada, 2014).

In addition to the existing collection, a large amount of documentation has been digitised in recent years, in conjunction with the acquisition of exclusively digital information. These new sources were integrated into the Collection, either internally or externally.

How did we go about deciding what parts of the Repsol's Library Collection to digitise? As Repsol possesses many different collections, we began with the conversion of these; starting at A and ending at Z but only with those where we had authorization from the vendor. Other considerations were:

- Conversion of high-use materials, making materials that have the highest demand more accessible to employees.

- An ad hoc approach, where materials are digitised and stored as requested.

Following Tedd and Large (2005) we classified digital information into four major groups as follows:

1. **Full-text materials** that include e-journals, e-books, e-press and open access collections. Under Repsol's *e-policy*, new items in existing collections are now acquired exclusively in digital format.
 - a. **e-journals.** The majority of e-journals still have printed counterparts, although the content may vary between the printed and the digital version.
 - b. **e-books.** One of the main objectives was to integrate the new acquisition of e-books into the existing collection.
 - c. **e-press (newspapers / magazines).** With the widespread use of the web, it was natural for newspaper/magazine publishers to make their products available online as well. That being said, it is important to note that digitally published news does not always contain the same information as its printed counterparts, and that it often provides more features such as links to related news items, archives, etcetera. There is, however, one exception in Repsol's *e-policy*: newspapers must be acquired and kept in both digital and print formats.
 - d. **Open access / e-print / open archive.** Open access is a system of providing users with access to full text and peer-reviewed articles. The term e-print is used to define the electronic version of an article. Open archive is used to describe reprints of articles published in one knowledge area.
2. **Metadata.** Sources that cover catalogs, indexes and abstracts, and sources that provide information about information.
3. **Multimedia material.** Internal materials in our Historical Archive are linked to TDL.
4. **Websites/Search Engines.** We reached an agreement with Google Scholar, so that the Collection in the TDL would be indexed within this search engine.

After the digitisation of the library's most in-demand materials, and the acquisition of new reference material, it was time to create a space where they could be stored and made available to users.

In 2018, Repsol's Documentation & Library Services Department launched TDL, a hosted platform for Repsol's collections using Ebsco Discovery® platform. The aim of this project was to create a single repository where the Repsol team could find the Library's Collection and other sources of information managed by the Documentation & Library Department for all the employees using corporate subscriptions. Both the large collection which includes physical and digital documents, and the services offered by the Department are provided through the same tool.

Maintenance of TDL involves both the equipment and the Collection. As with any computer-based service, hardware and software upgrades and modifications

need to be carefully planned to avoid any interruptions (as during this COVID-19 pandemic). In the case where that infrastructure is managing one or more repositories of digital objects, attention must be given to the effect of any change on object storage and access. Collection management is the set of activities intended to ensure that a library is internally held and that externally provided resources meet the needs of its users. Dealing with withdrawn or newly acquired materials in this digital instrument is more than a matter of modifying cataloguing records and adjusting shelf space. Adding and deleting digital objects requires control of all versions of the object, and adjustment of pointers to objects, and is complicated by inter-object relationships (Schwartz, 2000).

This Repsol facility uses the Ebsco Discovery Service (EDS) platform. And thus, most of the library's maintenance tasks are outsourced and done remotely by Ebsco's teams. However, part of this work is also conducted internally, by the employees in Repsol's Documentation & Library Services Department performing routine check-ups of the Library's content to ensure that there are no issues when accessing the collections, and contacting Ebsco or the content provider whenever there is one.

The Digital Library interfaces

It is known that when users search in a library, they tend to be unclear about what they are looking for or how they should search for it (Taylor, 2015; ICADL, 2018). One of the basic principles of libraries is to reinforce the autonomous behaviour of their users (Gorman, 2007). Moreover, the ideal scenario would be for users to have their expectations fulfilled when they perform a search by finding what they were looking for, as this would enhance the feeling of a successful search (Wilson, 1999; Barifah; Landoni, 2020).

To make the search process easier for users, and considering the the fact that, in the Department, we are more concerned with the process of searching for information and the autonomy of the user and less with the result, we have designed the TDL search interface based on the idea of promoting this independence.

According to studies (Blumer; Hügi; Schneider, 2014), faceted navigation is well received by users, who see it as a way of searching for information more accurately, quickly, and effectively. One of the criteria followed in creating the search interface is the application of a series of filters, such as "author", "year" or "subject", enabling the search to be refined.

The current presentation of TDL is made up of three main blocks (*Figure 1*):

1. The **upper block**, which contains access to the Library's own Collection and the user guide, available so that users can take full advantage of this

service, as well as some options to facilitate its use, such as changing the language.

2. The **intermediate block** is made up of the main search engine of TDL, which searches not only the Library's own Collection but also other external collections.
3. The **lower block** includes shortcuts to the rest of the Library's services, to some of the most visited journals and to the databases to which access is available thanks to the subscriptions managed by the Department. This information is constantly revised and updated.



Figure 1. The Digital Library's homepage.

The Documentation & Library Service Department is not unaware of search trends, as studies are constantly being carried out to check the means its users use to obtain the information they need for their day-to-day work. Hence, interest has arisen in linking TDL to Google Scholar, which is regarded as the largest search tool in the academic world, since it indexes the academic and scientific content of the network through institutional repositories (Capdevila-Torres, 2021). Likewise, the rise of mobile devices as a means of accessing libraries has raised concerns about the possibility of accessing TDL in this way (Liu; Briggs, 2015; Wu; Liang; Bi, 2018).

The Repsol Digital Library's response to the COVID-19 pandemic

As previously stated, libraries were compelled to respond promptly to the challenges the pandemic presented. According to some studies, libraries' responses

were rapid and effective (ALA, 2020; IFLA, 2020, Connaway et al., 2021). However, it should be noted that such a response would be conditioned by the resources available to them (Ameen, 2021; Ortega-Martínez et al., 2021).

The transformation of traditional services to the digital environment was already underway at Repsol with the creation of the Digital Library. Therefore, when the pandemic began, the Department already had a community of digital users employing this service. However, the use of face-to-face services was still more commonplace.

Since its launch, the Department has worked to make this service a user-friendly information source of reference for its users. This new situation offered an unexpected opportunity to re-evaluate current services in order to improve the library user experience. Among its most notable initiatives in 2020, carried out in direct response to the COVID-19 pandemic, is the possibility of accessing TDL from mobile devices and from Google Scholar. This not only facilitates access to the service itself by creating a new access route, but also ensures reaching potential users who, until now, might have preferred a different search engine (Kiran; Diljit, 2011). Furthermore, one of the most recent improvements in the process of making tdl an easily accessible service, launched in the summer of 2021, is the possibility of quick access from an icon on the homepage of the new company intranet. This ongoing work stems from the need to create a community that is loyal to this service, that sees it as its main information-seeking tool, and that considers its needs to be satisfied (Xu; Du, 2018). All this in terms of facilitating access to the existing collections in the Department.

Moreover, remote teamwork made the transformation of this high-quality reference service possible by offering instructions and use guides, access to the collections and the acquisition of digital collections, which became the new priority.

The Digital Library: background to the research

After one year of the implementation of TDL, a survey was carried out at Repsol's offices in North America (Canada & USA), Peru, Spain and Asia (Malaysia and Vietnam). The survey adopted random sampling to achieve a sample that approximated the distribution of the employees in different business units or corporate areas. The findings of the survey results show that whereas employees use the Internet principally to get information for their work, Repsol's service is not yet their first choice when searching for information. In addition, the findings describe the challenges and implications for the library users working in-house and remotely.

The survey revealed the predominant use of the Internet to obtain information for employees' tasks compared with TDL. Spain is the country where this

ratio of Internet use is lowest because the Documentation & Library Services Department began training for its use one year before the survey was made.

Another interesting result of this survey revealed the reasons why Repsol's employees used TDL. Among those who answered to the Internet and Library use question with "I use the Internet more" (55.5%, 172), the main reason why TDL is not being used is because users said that "I have my own resources" (57%, 98), followed by "I do not know how to use the library" (30.8%, 53).

The fact is that libraries have always reacted to the different circumstances that have affected their environment: "a large-scale situation such as the pandemic caused by COVID-19 has reshaped the way of working and the safety measures established in any type of library in the world" (Ortega-Martínez et al., 2021: 4). Moreover, social isolation and working from home has promoted the transformation of human interactions towards a virtual environment and, consequently, the discovery of digital tools that were previously unknown. This may have happened with digital libraries, as the impossibility of being in the physical space previously (and currently) occupied by libraries has required ingenuity and the search for new solutions to be able to access the same information, now, remotely (Hernández, 2021).

Taking this into account, the survey was carried out to identify the needs of the Company in the middle of a global health crisis. This case study should be very interesting for other libraries that are struggling with similar challenges for creating a digital library.

During the COVID-19 pandemic, we also consulted our users about TDL services and Collection. In this part of the survey, an increase in the use of this tool could be observed during the health crisis. Furthermore, 62% of the respondents had noticed the growth of the Library's Collection.

In order to achieve a complete overview of TDL's profitability, a third survey has been sent to Repsol's employees at this point in the COVID-19 pandemic. The main objective, in this case, is to find out if the measures taken during the pandemic have been effective and to ascertain whether this tool is familiar to the different business areas of the Company.

METHODOLOGY

Methodology, instrument design and context

An applied study was carried out to determine the opinions of Repsol's employees regarding their use of TDL related to the COVID-19 pandemic. Based on

previous analyses, the survey was designed to achieve the main aim of the study, which was to ascertain the purpose and frequency of use of the tool by Repsol's employees. The survey took place in five selected countries, and it adopted stratified sampling so that the result would mirror the distribution of Repsol's employees as closely as possible.

For this purpose, a questionnaire was designed and sent to 287 employees from different countries and business areas. The technique applied in the survey was a semi-structured questionnaire covering the following topics: Acknowledgement and frequency of use, Collection, and Means of access. All of them included open and closed questions using Microsoft Forms.

Given that this survey was carried out to check the impact of COVID-19 on knowledge and use of TDL, questions were asked taking into account the period before and after the start of the health crisis. For this study, the COVID-19 pandemic is considered to have occurred between March 2020 and December 2021.

It should be noted that this study has limitations such as the size of the study sample, the time limitation set on the pandemic period and the specificity of this case study. However, it is considered that such research could assist other specialised libraries, whether private or public, in their digital transformation and development.

Population

The sample generated from the responses received includes 287 employees. These respondents are spread across the territories as shown in *Figure 2*.

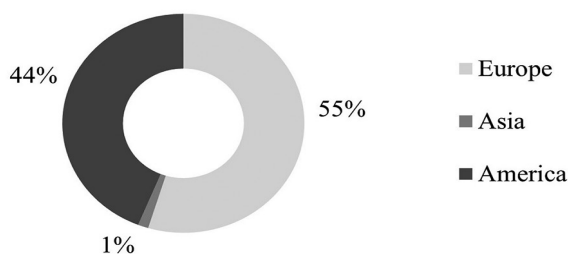


Figure 2. Location of the responding employees

It can be clearly seen that the majority of responses come from employees located in Europe (157, 55%), with the highest participation being found in Spain (145), followed by those working in America (126, 44%) the majority of whom are located in the United States (58). Last but not least, there is the participation of workers located in Asia (4, 1%).

The responses were also differentiated according to the area or business to which the respondents belonged, in order to detect whether all of them found what they needed in terms of the information included in The Digital Library. This differentiation can be seen in *Figure 3*.

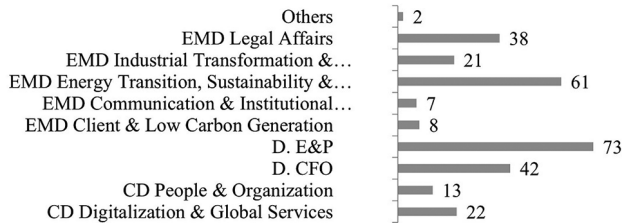


Figure 3. Business Area of the responding employees

Four areas emerge as the most representative. Of all respondents, 25.4% work in D. E&P and 21.3% in EMD Energy Transition, Sustainability & Technology. D. CFO represents 14.6% and EMD Legal Affairs represents 13.2% of the interviewees.

RESULTS AND DISCUSSION

Acknowledgement and frequency of use

The first block of questions in the survey focuses on users' knowledge of TDL, as well as the frequency with which they use this tool.

To the question "How long have you known about TDL?", 44.3% of the 287 respondents answered that they were aware of the tool before the start of the COVID-19 pandemic. 20.9% became aware of it during or after this period and only 34.8% were not aware of it at the time of responding to the survey. This means that around 65 percent of respondents were aware of TDL at the time of the survey, which is a fairly representative percentage.

Concerning the question "How did you get to know about TDL?", it can be seen that 39.5% of the surveyed population knew about the tool thanks to the information that is available on the intranet, MyRepsolnet. *Meanwhile*, 28.6% answered "from a colleague", and 28.1% got to know about tdl through a Department's internal communication. Only 3.8% have discovered it through other means. This shows that the main lines of communication established between the Documentation & Library Service Department and the user are effective.

The results of the answers to the question "How often do you use TDL?" can be seen in *Figure 4*.

People who do not use the tool amount to 36.9% of the respondents. In contrast, 20.9% use it weekly and 16.6% use it monthly. Only 9.6% use the service on a daily basis. The remaining 16% correspond to people who use TDL only occasionally.

Although the percentage of people who do not use TDL may seem high (37%), if we look at the results obtained in previous studies, shown above, where 87.8% used other sources or did not know how to use it, we can see the notable decrease in the number of people who do not use it, with an increase in the number of those users who now choose to use The Digital Library, even before other resources.

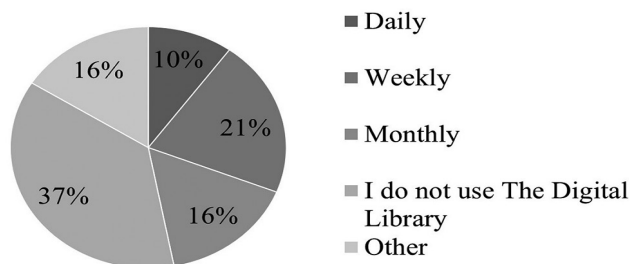


Figure 4. Frequency of use of TDL

Also related to its use compared to the COVID-19 pandemic period, 13.5% said that they use TDL more than before that period, and almost the same proportion of the population, 14.4%, uses it less. 72.1% said they use this tool with the same frequency. In other words, the COVID-19 pandemic would not have affected its use.

The last question of this block was related to the acknowledgement of and use of TDL and refers to the frequency with which TDL is used to perform certain actions, all of them of a digital nature. The results of the responses can be seen in *Figure 5*.

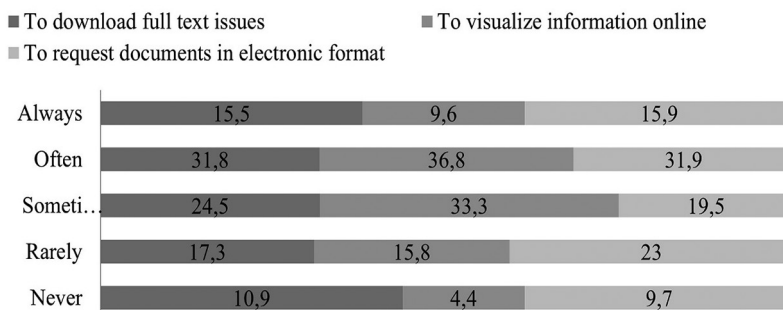


Figure 5. Frequency of use of TDL for certain actions

As evidenced by the results, downloading, viewing online and requesting documentation in electronic format are actions carried out regularly, with the second being predominant. However, this is not the only option offered by TDL and this is reflected in the rest of the responses.

Collection

The second section of this questionnaire aims to determine which part of the Collection is the most used and what the frequency of use is. These results are shown in *Figure 6*.

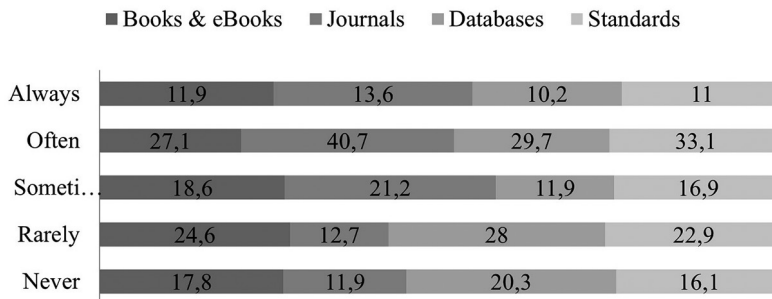


Figure 6. Frequency of use of the Collection parts

In general, the four resources asked about are used with approximately the same frequency, although books and databases are used slightly less frequently compared to journals. This may be due to the fact that the information contained in TDL is of a high technical standard, as employees need to work with high quality and up-to-date data.

As we have seen, TDL has quick access to different sections: databases, the most used journals, the general Collection or the Library’s own Collection. The following question refers to the use made of these different options. 44% of the surveyed population use TDL’s main search engine, for the general Collection, while 20.7% use the search engine for the Library’s own Collection. The same percentage uses the shortcuts to the most consulted journals (20.7%), which seem to be used more than shortcuts to databases and other platforms (14%). Therefore, it is confirmed that the hierarchy given to the different elements of the homepage corresponds to the importance attributed to each of them by users.

In any case, based on the responses obtained, 89% of respondents consider that the Collection meets their information needs. The remaining 11% are divided between those who agree that they would appreciate more legal background information, and those who do not consider it possible to confirm that

the Collection suits their needs as they do not know it well enough. Hence, the vast majority of the user population is satisfied with the content included in the tool.

Means of access

Improvements in recent years have made it possible to access TDL in different ways and from different devices. Since 2020, employees can access this tool from their mobile devices, and can also consult the Collection from Google Scholar. A year later, we have created a quick access to The Digital Library available on the homepage of *MyRepsolnet*. We have asked our employees if they know about these new ways of access, results of these responses are represented in *Figure 7*.

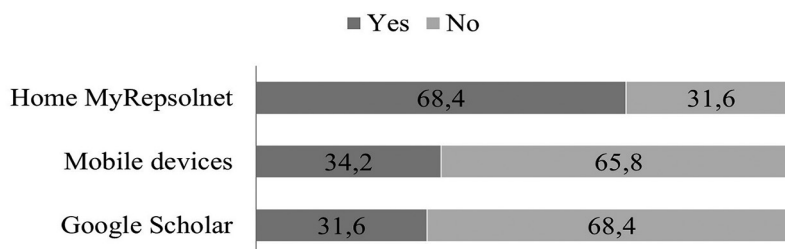


Figure 7. Knowledge of TDL access paths

This graph shows the great lack of awareness of the possibility of accessing TDL from Google Scholar (68.4%), despite the fact that Google is presented as the main source of information where users search in the first instance. There is a similar lack of awareness when accessing the Collection from a mobile device (65.8%). On the other hand, access to the tool from the *MyRepsolnet* homepage is considerably well known (68.4%), which implies that this implementation has had a very positive effect.

CONCLUSIONS

Digital libraries emerged as a natural step in the Communications Revolution. Traditional libraries are proving that they can cope with modern technology, where there is no conflict between new trends and traditional practices. Repsol's Digital Library is an example of this. From what was once only a traditional library, one that is in fact still in use, we have also implemented The Digital Library. Repsol's employees are working with both libraries -paper and digital- but

the COVID-19 pandemic has taught us that a digital library is essential, and our company is well aware of this fact. Despite the limitations of the study, once the results of the research carried out to verify the impact of the COVID-19 pandemic on the knowledge and use of the Repsol, S.A. Digital Library have been presented and analysed, a series of conclusions can be drawn.

First and foremost, the confirmation of the effective communication between the Documentation & Library Services Department and its users. Thanks to this, the service is known and used by a large number of the Company's employees. Such communication has always been constant, so the COVID-19 pandemic has not had a negative impact on it, although it has strengthened remote communication channels. It is understandable that this library shows a trend towards greater digitisation of services. This is demonstrated by the increased use and interest in this modality rather than face-to-face, even after the period of confinement and remote work. However, there are still a number of potential users that we need to reach, so we need to work on a greater outreach and improved communication to increase awareness.

Secondly, it can be said that the use of The Digital Library has increased in comparison with the previous period, since the percentage of users who do not use it has decreased considerably. In this sense, and although we cannot claim that it is a tool for daily use, as this depends on the tasks of each user, it is possible to affirm that the expectations of use and frequency of use of the service are being successfully met. Either way, the covid-19 pandemic has not affected frequency of use, as most users continue to use it as much as before. The fact that there are new access routes to this service could have contributed to an increase in the number of users, which is a good strategy for improving the service. For this reason, it can be said that the improvements made to The Digital Library are having positive results, in other words, the possibility of accessing the same service from different sites helps users to use this service.

This research also focused on why users employ The Digital Library. It is significant that a large proportion of users use the library to consult information sources in online format, mostly journals. Nevertheless, judging by the use made of the different elements of the tool's homepage, which show little use of the shortcuts to the most consulted journals in comparison with the use made of the main search engine, it could be said that these users consult journals of a very diverse nature. This, together with the existing satisfaction concerning the appropriate content of the Collection, leads us to believe that this library meets the needs of its users. The efforts of the Department's employees to meet the requests of its users are yielding results, and users can find in this service a reliable and useful source of information. Frequent surveys of this kind help the Department to understand the information needs of the Company's employees and to anticipate them.

In conclusion, it can be said that the measures taken by the Documentation & Library Department during the COVID-19 pandemic to support its users through The Digital Library have been effective. This will lay the foundation for further improvements to be implemented in this living project.

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