

# Identifying quality requirements demanded by university library users: a case study

Identificação de requisitos de qualidade demandados por usuários de biblioteca universitária: um estudo de caso

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## ABSTRACT

Proposes improvements related to the most valued requirements by the users of the Central Library of a Federal University, identified from a study of users. Aims to identify the profile of the users who attend this library and also the requirements that this users most value in information units. Five steps comprise the method of working. They are: characterization of the scene; development and implementation of the questionnaire; identification of the profile of the users; identification of requirements valued by users; and proposition of improvements to the Library. The results indicate that most users do not use the available collection and also that the study tables correspond to the main reason for users go to the library. The results also show that "Infrastructure" is the most prized category by library users in the study. The results also indicate that the most valued requirements by users of this library are "available closed rooms for group work", "available computers for research" and "provide wi-fi". The proposals for improvement relate to aspects linked to the library infrastructure. It points out that meeting the proposals listed can contribute to improving the perception of users to the services provided by the library.

**KEYWORDS:** User study. Federal University. Central library.

## RESUMO

Propõe melhorias relacionadas aos requisitos mais valorizados pelos usuários da Biblioteca Central de uma Universidade Federal identificados a partir de um estudo de usuários. Objetiva identificar o perfil dos usuários que frequentam essa Biblioteca e, também, os requisitos que esses mais valorizam em unidades de informação. Cinco etapas compõem o método de trabalho. São elas: caracterização do cenário; elaboração e aplicação do questionário; identificação do perfil dos usuários; identificação dos requisitos valorizados pelos usuários; e proposição de melhorias à Biblioteca. A metodologia utilizada para identificação dos requisitos é a proposta por Ribeiro *et al.* (2001). Os resultados indicam que a maioria dos usuários não utiliza o acervo disponível e, também, que as mesas de estudo correspondem ao principal motivo para ida dos usuários à Biblioteca. Os resultados indicam, ainda, que "Infraestrutura" é a categoria mais valorizada pelos usuários da Biblioteca em estudo. Além destes aspectos, os resultados apontam que os requisitos mais valorizados pelos usuários desta Biblioteca são "disponibilizar salas fechadas para trabalhos em grupo", "disponibilizar computadores para pesquisa" e "disponibilizar rede *wi-fi*". As propostas de melhoria se relacionam a esses requisitos. Aponta que o atendimento das propostas listadas pode contribuir para a melhoria da percepção dos usuários com relação aos serviços oferecidos pela Biblioteca.

**PALAVRAS-CHAVE:** Estudo de usuário. Universidade Federal. Biblioteca central.

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**JITA: DD. Academic libraries.**

## 1 INTRODUCTION

The library, seen as an organization that aims to constantly reach for its intended goals (MACIEL; MENDONÇA, 2006), needs the implantation of processes aimed at continuously improving its service provision. The possibility of investigations regarding these organizations are strategies that allow the library to compete, with greater accuracy, in the innovations and uncertainty for which the non profit organizations' market dynamic is characterized. Moreover, according to Maciel and Mendonça (2006), to observe the libraries functionality is a way of making its management easier, adding quality to its products and services and also to evidence its role within the community and its users.

In this sense, the user studies are alternatives that aim to know what individuals need in regards to information, or to know if the information needs by library users are being adequately satisfied (FIGUEIREDO, 1994). In addition, Figueiredo (1994) points that, from these studies, it can be verified why, how and to which end one use information and which factors affect its use. Sanz Casado (1994), in turn, defines user study as a set of studies that aim to qualitative and quantitative treating users' information habits ahead of through the application of different methods. As for the application of these studies, the author highlights that these may relate to aspects such as habits knowledge and information needs of users and the adequacy of the space destined to them.

Studies that consider methodological contributions of distinct fields of knowledge have been consolidated as a recurring dynamic in Information Science. In this scenario, the Quality Function Deployment (QFD), relates to a method that, according to Ferreira (1997), may be used to plan, project and structure a modern library for the existing quality standards, originated from an interface that observes the management processes from the engineering and administration areas. From this, this research is based on initial stages of QFD, which is used in order to identify the aspects most valued by the users and to direct the managing decision-making of the studied library.

These aspects imply interpreting that the initial planning of the library may require updates depending on the conditions of the information unit (FIGUEIREDO, 1994). In such contexts, user studies have the purpose of reviewing central aspects regarding the types of services offered, the existing organizational structures, the number of professionals available and also the needed resources for the library to fulfill its mission. Based on these aspects, the study proposed here was necessary due to the lack of knowledge of the profile and the information needs of the studied library's users, implying difficulties related to the accomplishment of tasks related to this information unit's administration. Among the difficulties encountered is the absence of a requirements identification plan that contemplates users' opinions and can be used to guide the allocation of human and financial resources. Therefore, it is expected that the allocation of resources from the prioritization of requirements contributes to the improvement of the users' perception regarding the products and services offered to them.

From the elements presented, the theme of this study is related to the study of users of the Central Library of the Federal University of Rio Grande do Sul. This study seeks to answer the following research problems: What is the profile of the users who frequent this library? What requirements do these users most value in information units? In a complementary way, the general goal of this study is to propose improvements related to the library users' most valued requirements based on a study of them. The specific objectives are to identify the profile of the users that attend this Library and also the requirements that these most value in information units.

The following sections of this study present: (i) the theoretical reference in which the study is based; (ii) the proposed work method to identify the profile and requirements most valued by library users; (iii) the development of the work, which includes the structured steps to propose improvements regarding the most valued requirements by users; and (iv) the final considerations on the work developed.

## 2 LITERATURE REVISION

Library administrations aim to ensure that all functions performed within the unit, regardless of character (administrative, technical or or service), are developed efficiently and effectively, in line with the institution's mission, objectives and goals (MACIEL, MENDONÇA, 2006). According to Maciel and Mendonça (2006), the planning, control and constant evaluation of the performance of the libraries constitute activities of paramount importance for their vitality.

Maciel and Mendonça (2006) also point out that the accumulation of managing, technical and informational functions by the librarians and also the lack of knowledge of these professionals about the history of the library and about the community that the library is willing to attend, constitute barriers to the administration of libraries. These authors also point out that the planning and the elaboration of policies of libraries must pass through the study of the users community. Such a study, according to these authors, should present a diagnosis of the user profile and indicate their main characteristics, their informational needs and desires, their habits of reading and of frequency to the library and everything else that is convenient to know.

Carvalho (2004) points out that, within a university space, it is indispensable that there be a library space, considering that this is one of the facilitating spaces for learning, seeing as it enables the exchange of literary knowledge between students, teachers and employees. Moreover, according to this author, the structure of a university library can only become qualified and effective if properly supported by the university that manages it. After all, this structure is not autonomous, but completely dependent on the university. In addition, regarding the existing relationship between university and library, Ferreira (1980) points out that by the type and quality of services provided by its library, it is possible to measure a university's degree of development. These days it is no longer admitted the possibility of a serious intellectual work without it being based on updated bibliographic sources.

As for the central university libraries, Ferreira (1980) emphasizes that the library is the organ that centralizes or coordinates by right, or in fact, the librarianship and documentary activities of the university. The central library is thus seen as the administrator of all the university's libraries' system. For a university, having a central library implies gains, as it is this that will coordinate the other sectorial libraries. This, according to Ferreira (1980), makes certain employees to be assigned administrative tasks of the libraries, and others the general care of the collection and users and observe aspects such as acquisition, collection chopping and reference service. Given this diversity of aspects, and considering the segmentation of publics and activities in the central libraries, user studies constitute a fundamental management tool for library administration.

User studies are necessary to know and trace the profile of the information units' users, since they allow to recognize and identify how the activities can be developed and administered to the levels of satisfaction presented by the users be always high (NEVES, ANDRADE, 2012). These studies are thus seen as channels of communication between the library and the community it serves (FIGUEIREDO, 1994). According to Figueiredo (1994), user studies can be understood as necessary to assist the library in forecasting demand or demand changes for its products or services, which allows adequate resources to be allocated, considering the conjuncture in which the library is inserted.

As for user studies' functions, Sanz Casado (1994) states that these studies subsidize the evaluation of the resources and effectiveness of information centers, identify necessary adaptations related to physical space and infrastructure, and allow homogeneous groups of users to be recognized for later use conducting training directed to the specific needs of each group of individuals. Araujo (2008), on the other hand, emphasizes that the user studies serve as a tool to prepare a diagnosis of the current situation. Thus, they present an overview of the current situation and allow projections for the future.

The market research carried out in the initial stage of Quality Fuction Deployment (QFD) corresponds to an activity that must be performed to listen to the voice of the clients, to perform the unfolding of the quality demanded by them and, also, to identify the importance of the items of the quality demanded by these individuals (RIBEIRO *et al.*, 2001). Within the scope of libraries, such research can then be performed to identify the aspects that these information units' users value most in these spaces. As a contribution, the identification of such factors can direct the allocation of resources and contribute to the improvement of users' satisfaction with libraries.

### 3 MATERIALS AND METHODS

In this section are described: the *(i)* research method and the *(ii)* work method used in this study. From these sections, there is the description of the used research methodology and the structured stages for accomplishment of the proposed goals.

#### 3.1 Research method characterization

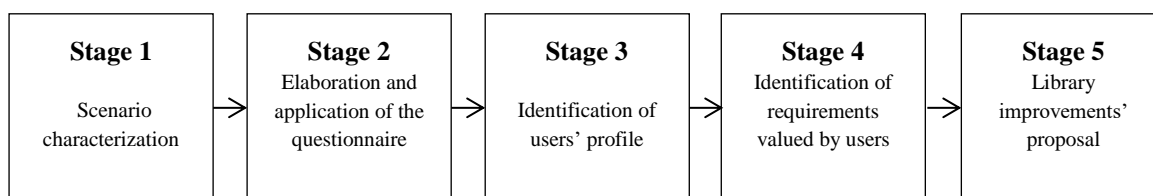
This is considered an applied research, because the means by which products, processes or systems can be developed and improved, aiming at satisfying a specific and recognized need (MIGUEL, 2012) are investigated. In addition, the study is also considered exploratory, since it seeks to identify and/or describe characteristics, which were ignored until the moment of the research; to quantify the frequency of some social phenomena; and/or to select problems or areas of interest for research (COUTINHO, 2014).

As for the approach, this study uses the mixed approach. This is justified because the qualitative approach is characterized by observing the research problem from the perspective of individuals (MIGUEL, 2012), while the quantitative approach is less susceptible to bias in data collection. In this scenario, according to this author, one way of strengthening approaches is to combine them.

In addition to the aforementioned aspects, it is worth noting that this work corresponds to a case study, since it seeks the deep and exhaustive study of one or a few objects, to allow its ample and detailed knowledge (GIL, 2010). Such studies are considered adequate for the investigation of a phenomenon within its real context, where the boundaries between phenomenon and context are not clearly perceived (YIN, 2005).

### 3.2 Characterization of work method

The achievement of the proposed objectives has been structured in a work method organized in stages. These are shown in Figure 1.



**Image 1.** Stages executed for reaching the proposed goals.  
Source: Elaborated by the authors.

In stage 1, the scenario of the library was characterized. For this, information related to the external and internal environments of the library was collected. The information related to the administrative structure of the University and to the Library System of which the unit under study is a part. The information related to the internal environment, in turn, related to the sectors of the Library and its attributions. In order to collect such information, visits were made to the Library, and also consulted the websites of the Library and the University where it is located.

In stage 2, a questionnaire was developed and applied to identify the profile and requirements most valued by the Library users. For the elaboration of such a questionnaire, the characteristics of the users that were to be identified (age, gender, etc.) were established. In addition, the categories of requirements to be evaluated by users were established:

infrastructure, services, user treatment, collection and accessibility. Such categories were selected in order to encompass the main aspects that can interfere in the service to the library users. The requirements that made up each category, in turn, were selected based on their potential relevance to the users. The completed and applied questionnaire can be viewed in Appendix A.

In the third stage, there was the identification of the Library users' profile. Excel was used for the compilation and analysis of the data obtained in the questionnaires. The presentation of the results, in turn, presented the percentage presentation of the observed distributions.

In stage 4, the information units' users' most valued requirements were identified. For the compilation and analysis of the data collected in the questionnaires, Excel was also used. The methodology used to identify the quality items (requirements) demanded by the Library users under study was proposed by Ribeiro *et al.* (2001). Such methodology indicates that the prioritization of the requirements must occur from the punctuation assigned by the users to the categories of requirements (in the case: infrastructure, services, user treatment, collection and accessibility). The details of the methodology proposed by these authors are presented in section 4.4.

The fifth stage aimed at proposing the improvements to be implemented in order to meet the requirements most valued by users. In order to propose such improvements, the results obtained and presented in steps 3 and 4 of the working method were used.

## 4 RESULTS

This section is divided according to the steps structured in the work method characterization: (i) scenario characterization; (ii) elaboration and application of the questionnaire; (iii) identification of the users' profile; (iv) identification of the requirements valued by users; and (v) Library improvements' proposal.

### 4.1 Scenario characterization

The characterization of the scenario where the study was conducted was divided into two distinct sections: (i) external environment and (ii) internal environment. The first presents information about the University where the Library is located; the second, in turn, presents aspects related to the sectors of the Library and its attributions.

#### 4.1.1 External environment

Regarding the Central Library, it corresponds to a supplementary body of the University, which corresponds to the integrating and coordinating body of the Institution's sectorial Libraries. The library manages 82.40% of the almost 900 thousand books made available by the University. The users able to use the University Libraries, in turn, correspond

to approximately 30 thousand students, of which approximately 67% correspond to undergraduate students.

#### 4.1.2 *Internal environment*

The Central Library has six sectors that manage external and internal activities. The external activities are the coordination of all the University Libraries. The internal are accomplished in sectors divided in:

- Direction: which manages the University Library System and, also, the Central Library.
- Acquisition Center: sector that manages and operates the acquisition, decomposition and disposal of bibliographic materials;
- Department of Users Services: sector that offers products and services to users, in order to assist in the recovery, use and production of information;
- Department of Technical Processes: sector that performs information processing and donations selection;
- Department of Rare Books: sector that performs the technical processing and the guarding of the collection of rare books, as well as tending to these books' researchers;
- Conservation Laboratory: responsible for the preservation, conservation and restoration of the Central Library works.

#### 4.2 *Elaboration and application of the questionnaire*

To prepare the questionnaire to be applied, the work team met to identify which requirements (evaluation aspects) should be analyzed in each of the categories. In this task, the team was concerned with listing the main aspects that could interfere with the users going to the Library to meet their information needs. In addition, not all requirements listed in the questionnaire correspond to elements that can be found in the Library. The goal of this was to identify if the studied unit can incorporate elements that are not currently offered, but that are important for the users. As an example, can be cited the requirements "offers night service" and "offers digital and reprographic (xerox) services".

In addition to the mentioned aspects, the questionnaire elaboration sought to follow the methodology proposed by Ribeiro *et al.* (2001) which proposes, among other things, that the number of requirements in each category should be approximately the same. Thus, the categories were organized in order to always present four or five requirements, a quantity considered sufficient by the work team to observe the priority items for the users. The questionnaire application occurred during the month of June 2015. The approach was random and users were asked to respond to the questionnaire at their own convenience. In addition, the approaches occurred in the morning and afternoon shifts, and 20 users accepted to participate in the research.

#### 4.3 *Identification of users' profile*

The identification of the users' profile occurred from the analysis of the answers obtained through questionnaires. In this context, it should be noted that the average age of respondents was 31.3 years and that 55% of respondents were female. Regarding the level of schooling, 70% of the respondents were studying for a college degree. As for the link between users and the University, it is noteworthy that 60% of respondents were undergraduate students. Regarding the areas of interest, the respondents stated that they had greater interest in the areas of Applied Social Sciences (41.2% of respondents) and Human Sciences (35.3%).

Regarding the Library frequency use frequency, the survey indicated that 60% of the respondents affirm that they attend the Library more than once a week, while 20% say they attend the Library once every six months on average. As for the identification of the reasons that lead the users to the Central Library, these should be evaluated as follows: the most important motive should have importance "1", the second most important should have importance "2" and so on. Subsequently, the importance of the reasons that lead users to the Library was analyzed from the sum of the inverse of the weights attributed by the respondents, as proposed by Ribeiro *et al.* (2001). Thus, for example, if 5 respondents classified an item as 2, 1, 4, 2, 2, the sum of the inverse results in Equation 1. Thus, in a scenario with 5 respondents, if all these considered an aspect as the most important, the sum of the inverse of the weights would equal 5.

**Equation 1. Sum of inverses example**

$$\frac{1}{2} + \frac{1}{1} + \frac{1}{4} + \frac{1}{2} + \frac{1}{2} = 2,75$$

Source: Adapted from Ribeiro *et al.* (2001).

From the data collected in the 20 questionnaires answered, it was identified that the reason that takes most users to the Library is "use of study tables", which received weight 9.75. After this reason, "use of technologies" (weight 7.28), "consulting the collection" (4.98), "quiet environment" (4.83) and "information search with librarians" appeared (2.83). From these aspects, one can see that the greatest weights refer to the Library's infrastructure – an aspect that demonstrates a tendency by users to use physical space and technological resources, to the detriment of aspects such as attendance and consultation to the Library's collection

Regarding the information search behavior of the respondents, 88.2% of the users affirm that they seek information through research in the University Library System, while 11.8% stated that they go through the shelves when they need to search for some Information in the Library. These results are in line with the analysis that indicates the low weight attributed to information search activity with the librarians. In this issue, the option of consulting the librarian was not indicated by any of the respondents. From these answers, it can be inferred that, in the majority, the users of the Library under study present an autonomous information search behavior. As for the use of the collection by the respondents, 44.4% stated that they did not use the library's collection, while 38.9% stated that they use the available collection for academic purposes.



#### 4.4 Identification of the requirements valued by the users

The identification of the requirements valued by the users occurred from the method proposed by Ribeiro *et al.* (2001). This method proposes that the research team can organize the answers to be evaluated in the quantitative questionnaire in tree structure, which should reflect the unfolding of the demanded quality. Table 1 presents the tree of the demanded quality structured by the work team.

**Table 1.** Quality demanded tree organized by the work team

Primary level	Secondary level	Tertiary level
Planning	Infrastructure	Making computers available for research
		Provide tables for individual study
		Making wi-fi available
		Provide closed rooms for group work
Process	Services	Offers print collection to loan
		Enable users to use databases
		Offers standardization services of academic works
		Offers digital and reprographic services (xerox)
		Offers scheduling for rare collection
Process	User treatment	Offers night service (6 pm to 10 pm)
		Open on Saturdays (8 am to 12 am)
		Provide research assistance
		Provide online attendance (chat)
		Offers multilingual attendance
Planning	Collection	Provide recent works of your interest area
		Provide collection in good condition
		Provide rare collection to consult
		Owning digital collection
Planning	Accessibility	Possess easy sign to understand
		Be easy to access (wide doors, ramps, few steps)
		Having a tactile floor (raised tread for safe walking)
		Be accessible to people with disabilities
		Provide assistive technologies (loupes, screen readers)

Source: Elaborated by the authors.

From the analysis of Table 1, the work team classified, primarily, the items to be evaluated in "planning" or "process". At the secondary level, therefore, the requirements were classified according to the categories established by the work team: infrastructure, services, user treatment, collection and accessibility. The tertiary level, in turn, evidenced the requirements selected to be evaluated by the users.

As for the unfolding of the method used, Ribeiro *et al.* (2001) points out that, in the closed questionnaire, weights can be assigned to items of quality demanded. For such, these authors point out that the closed questionnaire can question the importance that the client (in this case, the user) attributes to each item of the secondary level. In addition, according to these authors, within each item at the secondary level, the closed questionnaire can assess the importance attributed to the tertiary unfolding identified by the work team.

According to Ribeiro *et al.* (2001), the assignment of the weights to the demanded quality items of the secondary level can occur in comparative terms, from the request of the respondent to list the most important items (first, second, third, etc.). From this, according to these authors, the weights of each item of the secondary level can be obtained from the sum of the inverse. This way, the weight assigned by the respondents to the categories was identified. Table 2 shows the weights for the secondary level identified in the studies Library.

**Table 2.** Weights assigned to the requirements categories (secondary level of the quality tree)

Secondary level (category)	Weight identified at the survey
Infrastructure	12,57
Services	7,03
User treatment	6,70
Collection	9,57
Accessibility	5,23

Source: Elaborated by the authors

From the analysis of Table 1, the users seem to have attributed greater weight to the categories Infrastructure and Collection and lower weight to the category Accessibility. Such performances are possibly due to the characteristics of the Library and the fact that its physical collection consists essentially of works of greater historical relevance than scientific and, in its majority, restricted to local consultation.

As for the absolute weights of tertiary level items, these authors state that these weights can be identified from the arithmetic average of the responses of all the respondents (RIBEIRO *et al.*, 2001). According to Ribeiro *et al.* (2001), the degrees of importance attributed by the respondents to the tertiary items of the demanded quality must be transformed into percentage weights. This procedure, according to these authors, ensures that each block will have its weight correctly assigned.

In order to assemble the demanded quality tree that shows the weights assigned by the users, it is necessary to proceed as follows:

- First: Allocate the weights of the secondary level categories in the space corresponding to the category.
- Second: calculate the sum of the secondary level weights and allocate it in the corresponding space. In this case, the allocated value was 41.10.
- Third: calculate the percentage of each "category weight" on the sum of weights and allocate in the "weight" space of each category. For example, for the "infrastructure" category:  $(12.57 / 41.10 = 30.58\%)$ .
- Fourth: Allocate the arithmetic average of the weights of the requirements assigned by the respondents in the spaces corresponding to the requirements.

- Fifth: calculate the sum of the weight of the requirements of each category and allocate in the space corresponding to the total of the category. For example: for the category "collection", (6,78 + 6,83 + 4,94 + 6,11 = 24,66).
- Sixth: calculate the weight % of each requirement. To do this, in this step the weight of the requirement must be multiplied by the weight % of the category and this result should be divided by the total weight of the requirement. Subsequently, one must multiply the result obtained by 100.

Equation 2 presents, as an example, the calculation made for the requirement "Making computers available for research".

**Equation 2.** Example of Weight % calculation of each requirement

$$6,65 * \frac{30,58\%}{25,91} * 100 = 7,85$$

Source: Elaborated by the authors.

Table 3 shows the weights attributed by the 20 respondents to the categories and also the requirements analyzed in this work.

**Table 3.** Quality demanded tree and weights assigned to categories and requirements

Secondary level	Category Weight	Tertiary level	Weight requirement (maximum 7)	Weight %
<i>Infrast- ructu- re</i>	12,57	Making computers available for research	6,65	7,85
		Provide tables for individual study	6,00	7,08
		Making wi-fi available	6,50	7,67
		Making rooms available for group work	6,76	7,98
<b>Category total</b>			<b>25,91</b>	<b>30,58%</b>
<i>Servi- ces</i>	7,03	Offers print collection to loan	5,95	3,61
		Enable users to use databases	6,06	3,67
		Offers standardization services of academic works	5,33	3,23
		Offers digital and reprographic services (xerox)	5,84	3,54
		Offers scheduling for rare collection	5,05	3,06
<b>Category total</b>			<b>28,23</b>	<b>17,11%</b>
<i>User treat- ment</i>	6,70	Offers night service (6 pm to 10 pm)	5,85	3,40
		Open on Saturdays (8 am to 12 am)	5,95	3,46
		Provide research assistance	6,06	3,52
		Provide online attendance (chat)	4,71	2,73
		Offers multilingual attendance	5,50	3,20
<b>Category total</b>			<b>28,06</b>	<b>16,30%</b>
<i>Collec- tion</i>	9,57	Provide recent works of your interest area	6,78	6,40
		Provide collection in good condition	6,83	6,45
		Provide rare collection to consult	4,94	4,67
		Owning digital collection	6,11	5,76
<b>Category total</b>			<b>24,66</b>	<b>23,28%</b>
<i>Acces-</i>	5,23	Possess easy sign to understand	6,79	2,83

Secondary level	Category Weight	Tertiary level	Weight requirement (maximum 7)	Weight %
<i>sibility</i>		Be easy to access (wide doors, ramps, few steps)	5,95	2,48
		Having a tactile floor (raised tread for safe walking)	5,37	2,24
		Be accessible to people with disabilities	6,95	2,90
		Provide assistive technologies (loupes, screen readers)	5,47	2,28
<b>Category total</b>			30,52	12,73%
<b>Sum</b>	41,10			

Source: elaborated by the authors.

From the analysis of Table 2 it can be seen that the highest weight % was attributed to the requirement "making rooms available for group work". In addition, it is important to note that the requirement that received the smallest weight % was the requirement "having a tactile floor (raised tread for safe walking)". From the analysis of the results, it can be observed that the requirements most valued by the users relate to the Library Infrastructure. This is justified, since the users noted, in their answers, the category "Infrastructure".

#### 4.5 Library improvements proposal

From the valuation provided by the respondents to the requirements and categories evaluated in this study of users, aspects that could be improved in the Library were observed, which relate to the Library infrastructure. The most valued requirements were: "making rooms available for group work", which are not currently available; "Making computers available for research", which are only five machines; and "making Wi-Fi available," which is currently only available to students and university staff. From these elements, it was suggested to the Library's management to consider these aspects so that the space may meet more satisfactorily the aspects considered most important by the analyzed Library users.

## 5 FINAL THOUGHTS

The goal of this study was to propose improvements regarding the most valued requirements of users of the Central Library of the Federal University of Rio Grande do Sul, based on a user study. The specific goals were to identify the profile of the users that attend this Library and the requirements that they most value in information units. Based on these elements, a working method was elaborated in five stages. The results obtained in each of the steps are presented below.

In the first stage, there was a characterization of the scenario where it was identified information related to external and internal environments at the University Central Library. This stage identified elements such as context and attributions. In the second stage of the work method, the questionnaire was designed and applied to identify the profile and

requirements valued by users who attend the Library. In the third stage, the profile of the users was identified. In this context, it should be noted that the average profile of the respondents was characterized by the following aspects: average age of 31.3 years, having an incomplete college degree and being an undergraduate student of the University where the Library is located.

In the fourth stage, there was the identification of the category and also of the requirements most valued by the respondents. Users attributed greater importance to the category "Infrastructure", which had a 31% higher weight than the second most valued category (12.57 for Infrastructure and 9.57 for Collection). As for the requirements, those who obtained the highest percentage weight were "making rooms available for group work", "making computers available for research" and "making Wi-Fi available". These results, as well as those that evidenced the profile of the respondents, evidenced the users' autonomy in their information search behavior. This is justified, as weightings related to the Library infrastructure, which includes tables, computers and networks, were observed. It can be inferred, therefore, that these results demonstrate a tendency, on the part of the users, of using the physical space and the technological resources, to the detriment of aspects like attendance and consultation to the collection.

In the fifth stage, there was a proposal of improvements to be implemented in the Library studied. The proposed improvements were related to the availability of rooms for group study, the availability of more computers for research and, also, Wi-Fi network that can be accessed by the general public. Finally, it is expected that, from the incorporation of the aspects mentioned in the routine of the Central Library of the Federal University of Rio Grande do Sul, the services offered will be improved, as well as the users' perception regarding this information unit.

## IDENTIFICACIÓN DE LOS REQUISITOS DE CALIDAD DEMANDADOS POR USUARIOS DE BIBLIOTECA UNIVERSITARIA: UN ESTUDIO DE CASO

### RESUMEN

Propone mejoras relacionadas a los requisitos más valorados por los usuarios de la Biblioteca Central de una Universidad Federal identificados a partir de un estudio de usuarios. Objetiva identificar el perfil de los usuarios que frecuentan esa Biblioteca y, también, los requisitos que esos más valoran en unidades de información. Cinco etapas componen el método de trabajo. Son ellas: caracterización del escenario; elaboración y aplicación del cuestionario; identificación del perfil de los usuarios; identificación de los requisitos valorados por los usuarios; y proposición de mejoras a la Biblioteca. La metodología utilizada para identificación de los requisitos es la propuesta por Ribero et al. (2001). Los resultados indican que la mayoría de los usuarios no utiliza el acervo disponible y, también, que las mesas de estudio corresponden al principal motivo para la ida de los usuarios a la Biblioteca. Los resultados aún indican que la “Infraestructura” es la categoría más valorada por los usuarios de la Biblioteca en estudio. Además de estos aspectos, los resultados apuntan a que los requisitos más valorados por los usuarios de esta Biblioteca son “ofrecer salas cerradas para trabajos en grupo”, “ofrecer computadoras para investigación” y “ofrecer red wi-fi”. Las propuestas de mejora se relacionan a esos requisitos. Apunta que la atención a las propuestas presentadas puede contribuir para la mejora de la percepción de los usuarios con relación a los servicios ofrecidos por la Biblioteca.

**Palabras clave:** Estudio de usuario. Universidad Federal. Biblioteca Central.

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## APPENDIX A

This survey wants to identify the Central Library users' profile. Also intends to identify the requirements which are valued by the users of this library. The questions are objective. Thank you in advance for your participation.

**I. Age**  Years old

**II. Gender**  
Female  Male

**III. Educational level**

- Incomplete middle school
- Middle school
- Incomplete high school
- High school
- Undergraduate
- Graduate
- MBA
- Masters degree
- PhD

**IV. Link with University**

- No link with the University
- Graduate student
- Postgraduate student
- Teacher
- Middle or high school student
- MBA student
- Administrative technician

**V. Knowledge area of your interest (point only one option)**

- Exact and Earth Sciences (Mathematics, Statistics, Computer Science, Physics, Chemistry, Geosciences, Life Sciences)
- Engineering (Civil, Mining, Materials, Metallurgy, Chemistry, Mechanics, Production, Electrical, Other Engineering)
- Health Sciences (Medicine, Nutrition, Dentistry, Pharmacy, Nursing, Physical Education, Speech Therapy, Physiotherapy)
- Agrarian Sciences (Agronomy, Animal Husbandry, Veterinary Medicine)
- Applied Social Sciences (Law, Administration, Economics, Architecture, Information Science, Communication, Social Work)
- Humanities (Philosophy, Sociology, History, Geography, Psychology, Education, International Relations)
- Linguistics, Literature and Arts

**VI. Average use of Central Library**

- More than once a week
- Every week on average
- Every month on average
- Every six months on average
- Every year on average

**VII. List from 1 to 5 the reasons that lead you to the Central Library**

Here you must list from 1 to 5 the reasons (being 1 – most important, 2 – second most important, [ ... ] and 5 – less important).

- Consulting the collection
- Use of technologies (internet, wi-fi, scanner)
- Use of study tables
- Information search with librarians
- Quiet environment



**VIII. Your main way to search information or document (point only one option)**

- Consulting the librarian
- Seek information in the University Library System
- Go through the shelves
- Other. Which? \_\_\_\_\_

**IX. In relation to the collection, you:**

- Use for academic propose (study)
- Use for Professional propose
- Use for leisure, professional curiosities
- Don't use the collection

**General instructions:** Answer the questions with one "x" in the importance of the requirement to you. At final, order the importance of the requirements

**X. In relation to Library INFRASTRUCTURE**

Making computers available for research

Less important 1 2 3 4 5 6 7 Very important

Provide tables for individual study

Less important 1 2 3 4 5 6 7 Very important

Making wi-fi available

Less important 1 2 3 4 5 6 7 Very important

Making rooms available for group work

Less important 1 2 3 4 5 6 7 Very importante

**XI. In relation to Library SERVICES**

Offers print collection to loan

Less important 1 2 3 4 5 6 7 Very important

Enable users to use databases

Less important 1 2 3 4 5 6 7 Very important

Offers standardization services of academic works

Less important 1 2 3 4 5 6 7 Very important

Offers digital and reprographic services (xerox)

Less important 1 2 3 4 5 6 7 Very important

Offers scheduling for rare collection

Less important 1 2 3 4 5 6 7 Very importante

**XII. In relation to Library USER TREATMENT**

Offers night service (6 pm to 10 pm)

Less important 1 2 3 4 5 6 7 Very important

Open on saturdays (8 am to 12 am)

Less important 1 2 3 4 5 6 7 Very important

Provide research assistance

Less important 1 2 3 4 5 6 7 Very important

Provide online attendance (chat)

Less important 1 2 3 4 5 6 7 Very important

Offers multilingual attendance

Less important 1 2 3 4 5 6 7 Very importante

**XIII. In relation to Library COLLECTION**

Provide recent works of your interest area

Less important 1 2 3 4 5 6 7 Very important

Provide collection in good condition

Less important 1 2 3 4 5 6 7 Very important

Provide rare collection to consult

Less important 1 2 3 4 5 6 7 Very important

Owning digital collection

Less important 1 2 3 4 5 6 7 Very importante

**XIV. In relation to Library ACCESSIBILITY**

Possess easy sign to understand

Less important 1 2 3 4 5 6 7 Very important

Be easy to access (wide doors, ramps, few steps)

Less important 1 2 3 4 5 6 7 Very important

Having a tactile floor (raised tread for safe walking)

Less important 1 2 3 4 5 6 7 Very important

Be accessible to people with disabilities

Less important 1 2 3 4 5 6 7 Very important

Provide assistive technologies (loupes, screen readers)

Less important 1 2 3 4 5 6 7 Very importante

**XV. Order from 1 to 5 the requirements that you value in a Library**

Here you must order from 1 to 5 the aspects that you consider must important (being 1 – most important, 2 – second most important, [ ... ] and 5 – less important).

Infrastructure (computers, tables, network, rooms)

Services (loan, training, standardization, digitization, scheduling)

User treatment (night service, on Saturdays, online, multilingual, help)

Collection (update, state of conservation, rare works, digital archive)

Accessibility (signaling, access, flooring, accessibility to people with disabilities, assistive technologies)

