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Recognizing Best Practice in Portuguese Higher Education Libraries

Luiza Baptista Melo



Abstract

The purpose of this paper is to identify best practices in order to improve the quality of services in Portuguese academic libraries. This article describes an ongoing project to assess the performance of library services, resulting from a partnership of six Portuguese higher education libraries. The study has three main steps: (1) selection of criteria to be evaluated and selection of their corresponding performance indicators; (2) data collection and analysis; (3) identification of best practices. The selection of the criteria to be evaluated is based on a mixed model combining the Common Assessment Framework and the Balanced Scorecard. The associated performance indicators are in accordance with International Standards ISO 11620:1998 and ISO 2789:2006.

Keywords: benchmarking; academic libraries; performance assessment; Portugal

Cesaltina Pires



Introduction

This article describes a project to assess the performance of library services, resulting from a partnership of the Libraries of the Applied Mathematics and Pure Mathematics Departments of the Faculty of Science of the University of Porto, the Abel Salazar Institute of Biomedical Sciences of the University of Porto (ICBAS), the Lusíada University of Famalicão, the European Documentation Centre at the General Library of the University of the Azores, and the Documentation Centre of the Higher School of Nursing of Porto – S. João.

In an age of constant change and great competitiveness among companies, benchmarking has been widely used in commerce and industry over the past 25 years, in order to improve the quality of services and products (Camp, 1989). In an effort to improve the performance of documentation services, librarians and information managers all over the world have used this tool together with quality assessment models and performance indicators.

The vast body of literature on the subject provides multiple definitions of benchmarking. Cullen (2003) states that, in its application to libraries and information services, Foot offers a useful and pertinent concept – “a process of measuring your service’s processes and performance and systematically comparing them to the performance of others in order to seek best practice” (Foot, 1998). This definition focuses several concepts in the area of Quality Management which are extremely relevant: systematic comparison; processes; performance; and analysis to achieve best practices.

Ponjuán (1998) identified 5 stages of the benchmarking process:

1. definition of the purpose of the benchmarking study (define critical factors of success)

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2. formation of a benchmarking team
3. identification of the benchmarking partners (define organizations that can offer useful solutions to problems)
4. collect and analyze benchmarking data
5. act (obtain best practices and use them to enhance services/products).

These stages are represented in Figure 1 (adapted from Grandi and Ferrari, 2005). Our study follows the general benchmarking process. However we did not follow the sequence presented in Figure 1. The librarians involved in the project worked together from the beginning. Thus step 2 and 3 preceded step 1 and all the benchmarking partners participated in the selection of criteria to be evaluated.

Our study has three main steps:

1. Selection of criteria to be evaluated and selection of their corresponding performance indicators.
2. Data collection and analysis.
3. Identification of best practices.

The selection of the criteria to be evaluated is based on a mixed model combining the Common

Assessment Framework and the Balanced Scorecard. The associated performance indicators are in accordance with International Standards ISO 11620:1998 and ISO 2789:2006.

The remainder of this paper is organized as follows: in Section 2 we present the methodology used. Section 3 describes our sample and Section 4 presents and discusses the results. The final section concludes the paper.

Methodology

The project 'Recognizing Best Practices in Higher Portuguese Education Libraries' presented in this article results from a partnership of six academic libraries that are using a performance assessment system based on two familiar methods: the Common Assessment Framework (CAF) (European Institute of Public Administration, 2006) and the Balanced Scorecard (BSC) (Kaplan and Norton, 1992).

Figure 2 describes the three steps of the methodology used: selection of criteria to be evaluated and selection of the associated performance indicators; data collection and analysis and identification of best practices.

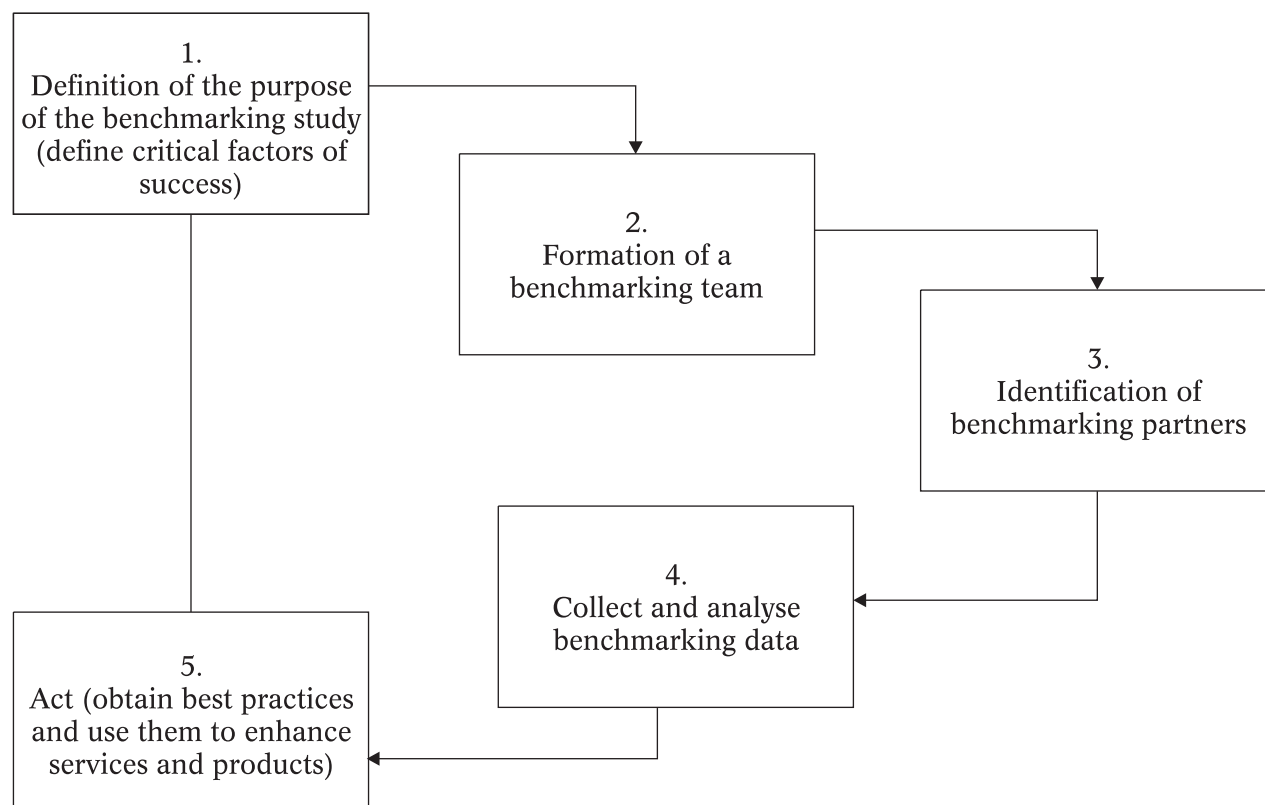


Figure 1. Stages of the benchmarking process.

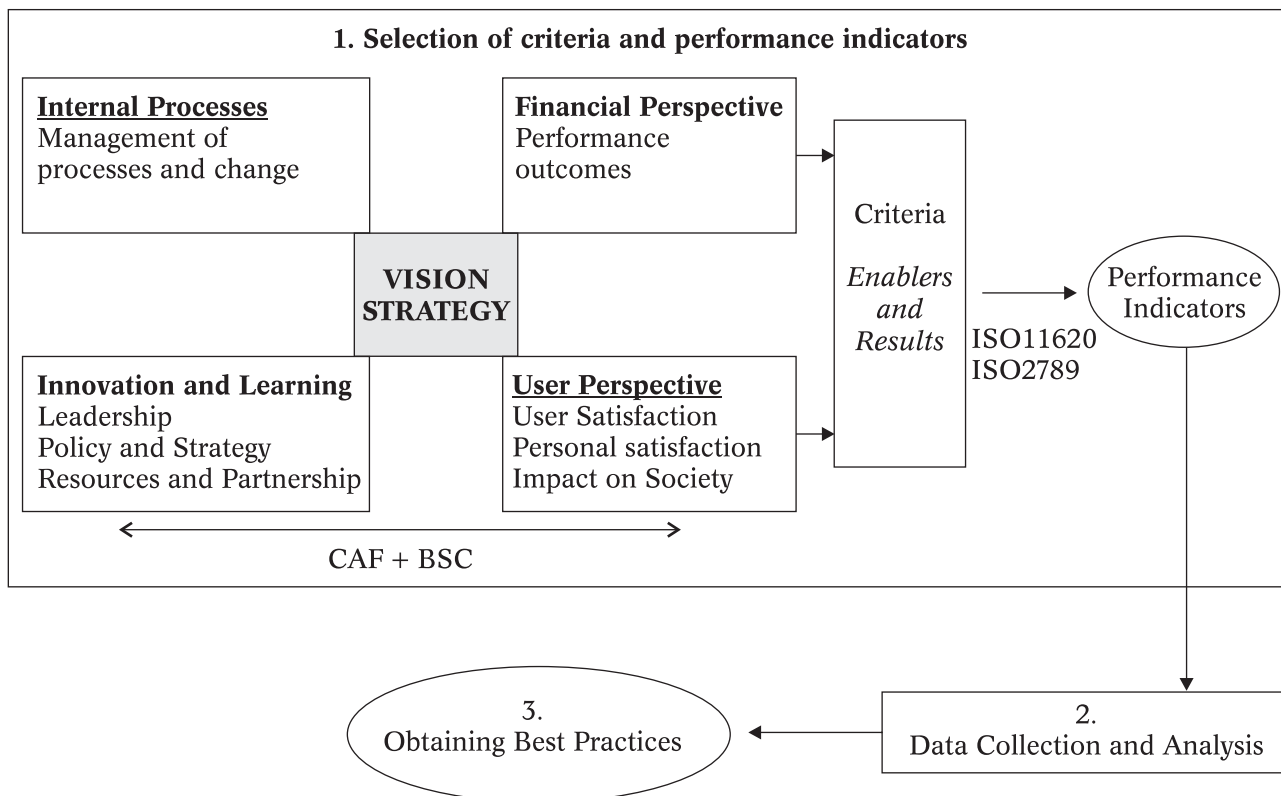


Figure 2. Steps of the methodology.

Selection of the Criteria and Performance Indicators

The top part of Figure 2 illustrates the first step of our methodology: the selection of the criteria and associated performance indicators to be evaluated. The selection of the criteria is based on a model developed by Melo (2005) which combines the CAF and the BSC.

The CAF is a self-assessment tool which comprises “an assessment based on evidence, against a set of criteria which has become widely accepted across the public sector in Europe” (European Institute of Public Administration, 2006). The organization is questioned about nine criteria for means and results (subdivided into 32 sub-criteria) which are predefined and classified on a scale of 0 to 5. The assessment must then be validated by defining the actions, concrete practices, objective facts and data identified.

The criteria for the enablers are:

- leadership
- strategy and planning
- human resources management
- management of resources and partnerships
- management of internal processes.

The criteria for results are:

- customer outcomes
- staff outcomes
- impact on society
- financial performance outcomes.

The Balanced Scorecard is a model for performance management that can be used in organizations of any size, to translate the strategy used into specific, measurable objectives. This tool is based on the breakdown of vision and strategy into four aspects:

1. financial
2. internal processes
3. learning and innovation
4. the customer.

The CAF-BSC mixed model (Melo, 2005) is illustrated in the top left part of Figure 2. Each one of the four aspects of the BSC corresponds to a subset of criteria in the CAF assessment tool. The mixed model has a set of measures which proves very effective because it deals with various aspects at the same time, namely:

- the development of an organizational model based on teamwork

- performance assessment
- the identification of areas to be perfected
- the adoption of benchmarking techniques for the recognition of best practices
- the definition of a set of strategic objectives relating to the measures to be assessed and to the respective initiatives involved.

A set of criteria was adopted based on this model which was linked to the respective performance indicators in accordance with international standards issued by the International Standards Organisation, namely, ISO11620:1998, ISO11620:amend.1:2003, ISO 2789:2003 and some indicators used in performance assessment initiatives carried out in universities in Germany, Australia, Sweden, the United Kingdom and Denmark (Poll, 2007). Tables 1 and 2 present the various criteria and the corresponding performance indicators, and indicate how they relate to both the CAF and BSC models.

In this project we focused on the following criteria: leadership; planning and strategy; management of resources and partnerships; management of internal processes; the client; the staff; and, the impact on society. Thus, we only excluded the financial perspective. We believe that it would be desirable to include the financial perspective in our benchmarking exercise. However our partnership includes both private and public institutions, which leads to very different budget policies and budget implementation. In addition, institutions are quite reluctant to provide this type of information. As a consequence we were forced to pursue our project without the inclusion of the financial perspective.

In order to assess these criteria, the following 20 performance indicators were applied:

Leadership

1. the definition and divulgation of the library's concepts of mission and vision
2. the development of the library management system based on the knowledge of the stakeholders
3. the promotion of learning and activities to improve the library's performance

Planning and Strategy

1. the conduct of a survey of library users
2. updating of the strategic plan

3. the collection of statistical data on performance for the use of benchmarking techniques

Management of Resources and Partnerships

1. number of monographs, journals (print version)
2. number of seating places for reading in the library
3. partnerships to minimize costs

Management of Internal Processes

1. average time to retrieve a free access document
2. average time to provide a document that does not exist in the library

The Client

1. number of library visits per capita
2. loans per capita
3. rate of use of electronic information resources
4. user satisfaction

The Staff

1. collaborator satisfaction

The Impact on Society

1. amount of academic publications
2. amount of academic publications and papers by the library staff
3. amount of training sessions for library users
4. the adoption of sustained development principles.

Data Collection

The data collection process included three types of questionnaires: a user questionnaire (see Annex A), a librarian questionnaire (see Annex B), and a questionnaire for other staff of the library (see Annex C). In the case of the users, the questionnaire was applied to a sample of potential users in each institution. On the other hand, every member of library staff answered the corresponding questionnaire.

The questionnaires were based on the performance indicators to assess academic libraries enablers and results (see Table 1 and Table 2). The performance indicators that use the CAF methodology are based on the data collected

CAF criterion	BSC perspective	Measurement issue	Performance indicator	Source of indicator
Leadership	Innovation and learning	How librarians develop and facilitate the achievement of mission and vision of the library	Communicating the vision and mission to all employees in the organization and to other stakeholders	CAF criterion 1.1
			The development of an organizational structure in accordance with the tasks of the library	CAF criterion 1.2
			The promotion and training to improvement the activities	CAF criterion 1.3
Strategy and planning		Strategy and planning of structure and operations taking account of the priorities and needs of the library users	The systematic gathering of information about the needs and expectations of the users	CAF criterion 2.1
			The reorganization and improvement strategies and methods of library activities	CAF criterion 2.2
			The development and application of methods to measure the library performance and benchmarking	CAF criterion 2.3
External Partnerships and Resources		Management of the resources and partnerships to support the effective operation of the library activities	Number of monographs. e-books journal and e-journals	Adapt. ISO 2789 3.2.32
			Opening hours per week	Adapt. ISO 2789 3.4.3
			The identification of strategic partners and the nature of the relationships	CAF criterion 4.1
Process and change management	Internal Processes	Process management to get quality services	median time of document acquisition	Adapt. ISO 11620 B.3.1.1
			median time of document retrieval from Open Access Area	Adapt. ISO 11620 B.2.3.2
			to assess market penetration of electronic service	Adapt. ISO 2789 A.6.2

Table 1. Criteria and performance indicators to assess academic library enablers.

CAF criterion	BSC perspective	Measurement issue	Performance indicator	Source of indicator
Customer outcomes	Customer	User satisfaction outcomes	Library visits per capita	Adapt. ISO 11620 B.2.1.3
			Loans per capita	Adapt. ISO 11620 B.2.4.2
Staff outcomes		Staff satisfaction outcomes	Overall user satisfaction (between 0–5)	ISO 11620 B.1.1.1
			Levels of absenteeism or sickness	CAF criterion 7.2
Impact on society		Scientific research	Overall staff satisfaction (between 0–5)	CAF criterion 7.2
			Rate of professors and researchers publication	CAF criterion 8.1
		Librarianship and information science research	Rate of the library staff participation in internal discussion groups. international professional meetings with senior librarians, etc.	CAF criterion 8.1
			The degree of compliance with environmental principles (for ex. energy saving, reduction of waste and packaging. use of recycled material)	CAF criterion 8.2
Performance outcomes	Financial	Costs	Cost per user (student or professor)	Adapt. ISO 11620 B.2.1.2
			Cost per library visit	Adapt. ISO 11620 B.2.1.3

Table 2. Criteria and performance indicators to assess academic library results.

Score	Enablers	Results
0	No evidence or only anecdotal evidence of an approach.	No results are measured.
1	An approach is planned P (plan).	Key results are measured and show negative or stable trends.
2	An approach is planned and implemented D (do).	Results show modest progress.
3	An approach is planned implemented and reviewed C (check).	Results show substantial progress.
4	An approach is planned, implemented and reviewed on the basis of benchmarking data and adjusted accordingly A (act).	Excellent results are achieved and positive comparisons to own targets are made.
5	An approach is planned, implemented, reviewed on the basis of benchmarking data adjusted and fully integrated into the organization.	Excellent results are achieved, positive comparisons to own targets are made and positive benchmarks against relevant organizations are made.

Table 3. Assessment scale of the model CAF for enablers and for results (EIPA, 2006).

through the various questionnaires and classified on a scale of 0 to 5 as defined in Table 3 (European Institute of Public Administration 2006).

To measure user satisfaction we conducted surveys. The data used to assess the degree of satisfaction with the various services and resources were obtained using Likert scales (a scale to measure opinions, attitudes or satisfaction in a non-neutral way, that is, it presents negative, neutral and positive poles (Hill, 2002)), and each category was scored from 1 to 5, complying with the recommendations of International Standard ISO 11620:1998.

Since there exists a very large number of potential users among the participating libraries, the questionnaires were applied to a sample of the population. In order for us to be able to make inferences about the population, we have to use probabilistic sampling methods, such as simple random sampling or stratified random sampling. In our case we used stratified random sampling in each institution participating in the study. In each institution we tried to obtain a sample large enough to guarantee accurate estimates.

Data Analysis

The first step of the analysis is to summarize the data collected. In the case of user satisfaction this involves estimating the mean for each item

in the questionnaire. We decided to estimate confidence intervals for the population mean of each institution. This is preferable to just presenting a point estimate, since it gives us an indication of how accurate our prediction is. The accuracy depends on the sample size (the bigger the sample the more accurate will be the estimate) and on the variability in the population for the variable under analysis (the smaller the population variability the higher will be the accuracy). The confidence interval for the population mean, μ , is given by:

$$\left[\bar{x} - z_{\alpha/2} \left(\frac{s}{\sqrt{n}} \right), \bar{x} + z_{\alpha/2} \left(\frac{s}{\sqrt{n}} \right) \right]$$

where \bar{x} is the sample mean, s is the sample standard deviation (which is the estimator of the population variability), n is the sample size and $z_{\alpha/2}$ is the critical value from the normal distribution for a confidence level of $(1-\alpha) \times 100\%$. The confidence level indicates the degree of confidence that the estimated interval contains the true value of the population mean. In our case we worked with a 95 percent confidence level. The confidence intervals can be estimated using any statistical software, such as the Statistical Package for the Social Sciences (SPSS) or even Excel (using the Data Analysis Tool).

The next step involved the comparison between institutions of the values obtained for each performance indicator. For the performance indicators

which are based on sample data we intend to pursue, in a future study, additional analysis will be needed in the future, so as to test if the observed differences are statistically significant. In fact, an institution might present a better average mean just due to sampling error (with a different sample the result might have been different). We intend in future to perform t-test to compare each institution with the best performing institution in each item. Let m_x and m_y be the population means of institutions x and y , respectively. We will test the null hypothesis that there is no difference between the two institutions, $\mu_x - \mu_y = 0$, against the one-sided alternative that $\mu_x - \mu_y > 0$, (where x is the institution though to be the best performing one). If the null hypothesis is rejected, one can conclude that there is evidence that institution x performs better than institution y . The t-statistic is calculated as follows:

$$\frac{\bar{x} - \bar{y}}{\sqrt{\frac{s_x^2}{n_x} + \frac{s_y^2}{n_y}}}$$

Assuming large samples one can use the normal distribution (many statistics books assume that n_x and n_y larger than 30 is enough for the normal to be used). The null hypothesis is rejected if the value of the statistic is larger than z_α , where z_α is the critical value of the normal distribution for the level of significance of α (usually 1 percent, 5 percent or 10 percent).

Identification of Best Practices

The previous step allows us to identify the institution which performs best in terms each of critical success factor. Once this is done, one needs to identify the reasons for the better performance. Which practices explain that a given institution performs better? If all the process is done correctly, at the end of the process we will have identified the best practices and actions to be taken so that the other institutions can adopt them.

Description of the Sample

The assessment was based on three types of questionnaire: one for librarians, one for collaborators and one for library users (the questionnaires are presented in Annexes A, B and C). All librarians and collaborators answered their questionnaires. The library users questionnaire was administered to a sample of the population of library users.

Table 4 presents data on the potential library users (students, teachers and personnel in each of the institutions). It should be noted that the institutions vary quite a lot in size. The smallest is the Higher School of Nursing of Porto (776 people) and the largest is the Faculty of Sciences of the University of Porto (4174 people). In the last line of Table 4 we present the percentage of each institution in the total population under analysis (10,861 people).

We used a stratified sampling procedure. We divided the population into three groups: teaching staff, students and non-teaching staff of the institutions. Then in each group we selected randomly the elements of the sample. The questionnaires were sent by e-mail to all elements of the sample. In addition, to increase the response rate, the elements of the sample were also contacted in the library installations, in the classrooms and in the corridors of the institutions. The percentage sample we aimed for was 25 percent.

Table 5 presents the number of respondents in each institution and their percentage of the total of 1,285 respondents. Due to differences in the willingness to answer the questionnaires we did not get a proportional stratified sample (for example, University of Azores represents only 9 percent of the respondents). The two first institutions represent a smaller proportion of the respondents than their proportion in the total population and the reverse holds for the last three institutions. Although this may look as a serious drawback of our study, it should be noticed that for comparison purposes it is not necessary to have a proportional sample. For example, if one wants to do t-tests to compare means between two different institutions, what is important is that, for each institution, the sample is large enough to provide us with accurate estimators for the population of that institution. In that respect the most problematic sample of respondents is the one from the University of the Azores, which is the smallest both in absolute terms and as a percentage of the population (representing only 4 percent of the population of the institution). This implies that our estimates for University of Azores will be less accurate. For the remaining institutions the respondents sample sizes are much higher and are considered excellent representations of the universes under investigation.

	UAzores Ponta Delgada	FCUPorto Mathematics	ICBAS UPorto	ESEnfPorto SJ	ULusiada Famalicão	Totals
Universe	2000	3728	1553	689	1313	9283
Students	270	283	273	54	69	949
Teachers	276	163	117	33	40	629
Personnel	2546	4174	1943	776	1422	10861
Total	24	38	18	7	13	100
Percentage						

Table 4. Description of the universe of library users.

	UAzores Ponta Delgada	FCUPorto Mathematics	ICBAS UPorto	ESEnfPorto SJ	ULusiada Famalicão	Totals
Respondents	75	388	259	117	291	1130
Students	27	31	28	8	12	106
Teachers	10	19	10	5	5	49
Personnel	112	438	297	130	308	1285
Total	9	34	23	10	24	100
Percentage	4	10	15	17	22	
Respondents as % of Institution Universe						

Table 5. Description of library users respondents.

Analysis of the Results

In this section we present the preliminary results of our study. We start by analyzing the results of the user surveys. These results are particularly important for measuring the performance of library services, since the users are the ultimate judges of whether the quality of the services is good or not. Next we analyze the results obtained for the 20 performance indicators, which are based on the user surveys and the questionnaires and interviews with the librarians and other staff of each library.

Results of the User Surveys

The user satisfaction surveys involved 1,285 questionnaires and were conducted from 15 October to 15 November 2006. Table 6 and Table 7 summarize the results of these surveys. Table 6 shows the percentage use of the library and the users' satisfaction with the various library services; Table 7 presents the percentage use of electronic resources.

The first item in Table 6 indicates the percentages of respondents who said they had used the library or documentation centre in the previous 12 months. The figures show that this percentage varied from 74 percent to 100 percent, depending on the institution and type of user. The data reveal the extent to which the services have been used.

The next item, *Analysis of services/resources*, presents the average of the user satisfaction degree with various services/resources of the library. As mentioned before these questions used a Likert scale from 1 to 5 (5 – very good, 4 – good, 3 – satisfactory, 2 – mediocre and 1 – bad). The average level of satisfaction with specific library services or resources ranged from 2.7 to 4.3.

The General Library of the University of the Azores, the Mathematics Libraries of the FCUP and the Documentation Centre of the Higher School of Nursing of Porto have particularly good results in relation to the comfort of their installations. The ICBAS library obtained a lower score (3.2), which can be explained by the fact that the library building is relatively old (beginning of the 20th century) with bad illumination (this was indicated by the respondents).

With respect to the updating of the documentation, the Mathematics Libraries of the FCUP are at

Assessment	UAzores			FCUPorto	ICBAS	ESEnPorto	Ulusfada
	Students	Teachers	Personnel				
Use in last year (%)	89	96	80	74	88	86	82
				97	89	88	100
				100	90	100	100
Arithmetic Average							
Analysis services/resources							
Comfort of installations	4.3			3.9	3.2	3.9	3.6
Updated documentation	3.4			3.7	3.4	3.6	3.2
Computer equipment	3.0			3.2	2.7	2.7	2.9
Document loans	3.7			3.5	3.5	3.8	3.3
Photocopying/Printing services	3.2			3.4	3.3	3.3	3.1
Overall satisfaction with library (Average)	3.76			3.76	3.44	3.83	3.36

Table 6: Results of user surveys (user satisfaction and percentage of library use).

the forefront, whilst the lending services are considered good (we consider a score above 3.5 'good') in all of the libraries in this project, with the exception of the services of the Lusíada University of Famalicão. The most likely cause for this result is the very short loan period (3 days) in this institution. Thus, an extension of the loan period is suggested to meet with user expectations.

The lowest average figures refer to the degree of satisfaction with the information technology equipment available. This is due to the fact that in recent years there has not been a significant growth in the number of wired network terminals (in the open question of the questionnaire many respondents complained about the small number of terminals). The option was to make wireless networks widely available on the campuses of the academic institutions, hoping that students would acquire laptop computers in order to access the electronic services/resources. The comments of the respondents show that users desire more terminals for their work.

Regarding the photocopying/printing services the level of users satisfaction is very similar across institutions (varies between 3.1 and 3.4).

The last item in Table 6, *Overall Degree of Satisfaction with the Library*, assesses the set of services/resources that the library or documentation centre provides. The average of the overall satisfaction is relatively good in all the institutions, varying between 3.36 in Lusíada University and 3.83 in Documentation Centre of the Higher School of Nursing of Porto – S. João. The last institution benefits from spacious, comfortable installations, up-to-date documentation and the loan service functions smoothly in the opinion of its users.

Table 7 shows information about the rate of use of the open access catalogue and of various electronic resources, as well as the places where these resources were used.

It should be noted that the percentage of users who utilize open access catalogues, bibliographic data bases and full text journals is already noticeable, although it varies quite a lot among the various institutions and types of users. On the contrary, the percentage use of e-books is very small.

With respect to the open access catalogue there is a striking difference between the Azores University

and the remaining institutions (the teachers of the Faculty of Sciences of Porto University are also frequent users of the catalogue). This might be explained by the location of the computer terminals in the library, very close to the library entrance.

Regarding the electronic resources the teachers have the highest percentage use in all institutions except in the Documentation Centre of the Higher School of Nursing of Porto. In addition, the teachers access these resources in the institution but not in the Library. It is also interesting to notice that, in general, the students seem to be lagging behind in the use of these resources. This suggests the need for marketing strategies especially directed to students. The objective is to inform and train the user on the utilization of these resources, so as to increase their autonomy and to alleviate the reference services.

Results for the Performance Indicators

Let us now analyze the results for the 20 performance indicators which were chosen to assess performance. Table 8 shows the quantitative and qualitative results obtained for the various performance indicators.

The figures in Table 8 come from different sources. The scores, which are in the shaded cells, were assigned as a result of the questionnaires and interviews with the librarians, using the CAF scoring criteria, on a scale of 0 to 5, as described in Table 3. The user satisfaction indicator is the overall satisfaction score obtained in the user survey (from Table 6). The remaining figures in white cells refer to hard data collected by the librarians.

Leadership

All the academic libraries involved in this project have a clear definition of their mission and vision. In addition, they develop management policies which take the dialogue with collaborators into consideration and promote activities to improve the library's performance, with the exception of the General Library of the University of the Azores. Thus the various institutions show a good performance regarding the leadership criterion, excepting the General Library of the University of the Azores. This institution does not promote activities to improve the library's performance and the management system has not been based on the knowledge of the stakeholders.

Best Practice in Portuguese Higher Education Libraries

Assessment		UAzores	FCUPorto	ICBAS	ESEnfPorto	ULusíada
Use of on-line services/ resources		Percentage				
Catalogue	Students	81	48	54	47	46
	Teachers	89	90	36	25	58
	Personnel	75	75	70	100	25
<i>Satisfaction with catalogue</i>		Modal response and respective frequency				
		45-Good	29- Good	34-Good	30-Enough	33-Enough
Electronic resources		Percentage				
	Students	63	55	57	52	45
	Teachers	89	90	82	50	50
	Personnel	63	75	50	100	25
Bibliographic data-bases	Students	68	49	38	43	37
	Teachers	70	87	64	63	50
	Personnel	63	75	40	0	0
e-books	Students	0	10	10	4	13
	Teachers	4	19	18	13	8
	Personnel	0	50	0	0	0
Full text journals	Students	15	15	35	28	10
	Teachers	44	74	61	50	25
	Personnel	25	25	30	0	0
Place of use		Percentage				
Library	Students	52	32	39	24	22
	Teachers	15	23	7	13	17
	Personnel	25	25	20	100	25
Institution	Students	11	16	19	21	15
	Teachers	70	87	71	38	33
	Personnel	38	50	40	0	0
Remote	Students	17	16	17	18	20
	Teachers	30	23	7	13	17
	Personnel	38	50	0	0	25

Table 7. Results of the percentage use of various electronic resources.

Performance indicator	Assessment				
	UAzores Ponta Delgada	FCUPorto Mathematics	ICBAS UPorto	ESEnfPorto SJ	ULusíada Famalicão
Leadership					
The definition and divulgation of the library's concepts of mission and vision	4	4	4	4	4
The development of the library management system based on the knowledge of the stakeholders	3	4	4	4	4
The promotion of learning and activities to improve the library's performance	2	5	5	5	5
Planning and Strategy					
The conduct of surveys of library users	3	4	3	4	3
Updating of the strategic plan	3	4	4	4	4
The collection of statistical data on performance for the use of benchmarking techniques	4	4	4	4	4
Management of Resources and Partnerships					
Number of monographs /Number of Journals (print version)	11810 / 554	23474 / 380	19779 / 1114	4832 / 121	9240 / 389
Number of seating places for reading in the library	239	166	46	80	120
Partnerships to minimize costs	4	4	4	4	4
Management of Internal Processes					
Average time to retrieve a free access document	-	1' 21"	1' 15"	-	1' 10"
Percentage use electronic resources (weighted average)	66%	58%	60%	54%	45%

Average time to provide a document that does not exist in the library	4 weeks	3 weeks	3 weeks	3 weeks	3 weeks	4 weeks
The Clients						
Number of library visits per capita(from 15th Oct. to 15th Nov. 2006)	-	0.9	6.4	11.3	4.1	
Loans per capita	-	1.4	-	10.7	4.9	
User satisfaction – Sample Arithmetic Average	3.76	3.76	3.44	3.83	3.36	
Confidence interval for the population mean (95% confidence level)	[3.60; 3.90]	[3.69;3.83]	[3.36;3.52]	[3.73;3.93]	[3.28;3.44]	
The Staff						
Collaborator satisfaction (Arithmetic Average)	-	3	3	3	3	
Number of the library staff	13	5	4	5	4	
The Impact on Society						
Amount of academic publications per capita (2005)	-	4	3	2	3	
Amount of academic publications and papers by the library staff (2005)	-	4	2	3	2	
Amount of training sessions for library users	3	3	2	3	3	
The adoption of sustained development principles Arithmetic Average (Model CAF Scale)	3 3.2	4 3.9	3 3.4	4 3.7	4 3.6	

Table 8: Results for the 20 performance indicators.

Note: the symbol – means that we were not able to get data for that performance indicator.

Planning and Strategy

In terms of planning and strategy the various libraries show a very similar performance. They routinely collect statistical data for benchmarking purposes and perform user surveys. In addition they update their strategic plans. We believe this result is due in large part to the ongoing partnership which has encouraged these types of procedures.

Management of Resources and Partnerships

In terms of resources there exists a wide variation across the participating institutions. The Documentation Centre of the Higher School of Nursing of Porto has the smallest collections of monographs and print journals, whereas the Mathematics Libraries of the FCUP have the largest monographs collection and the Abel Salazar Institute of Biomedical Sciences of the University of Porto has the highest number of print journals. It should be noted that in recent years, with the appearance of online editions, many institutions have gradually suspended the acquisition of the print editions of journals. This explains why some libraries (such as the Mathematics Libraries of the FCUP) have relatively small print journals collections but a relatively good performance in terms of academic publications per capita.

Management of Internal Processes

Regarding the efficiency of the internal processes the institutions are quite similar in terms of the average time to provide a document that does not exist in the library (which varies between 3 and 4 weeks) and the average time to retrieve a free access document.

In terms of the overall use of electronic resources the Azores University is at the forefront. In fact, if we compute a weighted average of the percentage use of electronic resources taking into account the weight of each group in the institution population, the percentage use in Azores University is 66 percent whereas Lusíada University is the one with the lowest use (45 percent).

The Clients

With respect to the number of library visits and loans per capita there exist wide differences across institutions. The Documentation Centre of the Higher School of Nursing of Porto has, by

far, the best performance in these two indicators. From the interviews with the librarians and also from site visits, we believe this is due to the more practical nature of the course taught in this school, which requires students to do many group projects. The students use the Documentation Centre both as a place of group meetings and to do bibliographic searches.

Table 8 shows the point estimate of the average user satisfaction in each institution. In addition, it also shows the confidence interval for that parameter, with a confidence level of 95 percent. One can infer that, with a confidence level of 95 percent, the average satisfaction of the populations of each institution fall within the intervals observed in Table 8. As expected our estimative is less accurate for the University of Azores, due to the smaller sample size. As described in the previous subsection the overall user satisfaction is relatively good in all the institutions. The best performing partner is the Documentation Centre of the Higher School of Nursing of Porto.

The quality of the services provided by a library or documentation centre does not depend on the size of the document collection but rather the degree to which the user's expectations are satisfied. This fact is well illustrated in our results. The Documentation Centre of the Higher School of Nursing of Porto – S. João has the highest User Satisfaction, 3.83 with a 95 percent confidence interval of [3.73;3.93] even though its collection is the smallest.

The Staff

With respect to the staff satisfaction level (obtained through the staff questionnaire) all institutions have the same value (3). From the open questions comments we can conclude that the satisfactory level of satisfaction is more related to factors such as the lack of job security and the level of salaries than the specific work environment.

The Impact on Society

Regarding the impact on society criterion, the Mathematics Libraries stand out as a consequence of the level of scientific production (amount of scientific publications *per capita* 2005 both for academic and library staff)

All the institutions have realized formal training sessions for library users, except the ICBAS

Library (however users are helped whenever they need it). As a result of our benchmarking exercise, the librarians in this institution are already planning to do formal training sessions.

Regarding the adoption of sustainable development principles, it should be noted that libraries and documentation services have adopted procedures in that direction, although there is still room for improvement in some institutions. The following good practices were identified during this project: the provision of separate containers for the disposal of materials such as paper, cardboard, plastics and batteries; the use of recycled toners and ink cartridges in copying for library users, so that support material can be returned and reused; and, the use of fluorescent light bulbs.

The Arithmetic Averages in the last row of Table 8 represent the average of the scores of the various CAF criteria (the shaded cells).

Conclusions

Academic documentation and information services should strive incessantly to revitalize themselves for the benefit of internal users and the academic community, in harmony with the institution they have to serve. It is essential to take on a creative, dynamic, renovating position to better provide for the needs of a constantly changing society.

In this article we presented a methodology that can be used to identify best practices in order to improve the quality of services in higher education libraries. Our methodology is based on the idea of benchmarking and it requires the cooperation of all benchmarking partners. Through the systematic measurement of several performance indicators and their comparison between participating institutions one can identify the best performing institution in the various performance dimensions. Identifying the reasons why an institution performs better than others will allow the remaining institutions to adopt such best practices so as to improve the quality of their services.

In our ongoing benchmarking process we already obtained some interesting results. The first is related to the fact that the best performing institutions in terms of user satisfaction are not the ones with the largest collections. Users seem

to value the existence of spacious and comfortable installations, up-to-date information and smooth loan services. Our results also show that the use of electronic resources is still low among students, which suggests the need of marketing strategies directed to students. The participating institutions show a good performance in terms of leadership, planning and strategy, which is partly due to the ongoing partnership which has encouraged these type of procedures.

Our benchmarking team involves libraries with very different characteristics and dealing with different areas of knowledge. However, for some performance indicators (such as academic publications and library visits per capita) it would be preferable to compare institutions in the same area of knowledge (Sciences, Medicine, Social Sciences, Human Sciences, Arts). In spite of this, we believe that our exercise has been worthwhile.

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ANNEX A – User Survey

Library or Documentation Center

1. Indicate your position in the Institution.
Student Teacher Staff Other
 2. Have you used the Library or Documentation Center during the previous 12 months ?
Yes No
 3. The Library or Documentation Center offers several services. Indicate your satisfaction degree, in a scale from Bad to Very Good:
 - 3.1. Comfort of the installations
Bad Mediocre Satisfactory Good Very Good
 - 3.2. Updated Documentation
Bad Mediocre Satisfactory Good Very Good
 - 3.3. Available computer equipment
Bad Mediocre Satisfactory Good Very Good
 - 3.4. Loan Services
Bad Mediocre Satisfactory Good Very Good
 - 3.5. Photocopying/Printing Services
Bad Mediocre Satisfactory Good Very Good
 4. The Library or Documentation Center has an Open Access Catalogue, which contains the description of the information that one can find in this service. Do you use this catalogue to search the documents you are looking for?
Yes No
 - 4.1 Indicate the degree of satisfaction relatively to the Open Access Catalogue.
Bad Mediocre Satisfactory Good Very Good
 5. Do you use the electronic resources such as Web of Knowledge, SCOPUS, B-on (Library of Knowledge Online Portuguese Consortium)), e-books, e-journals available in the Institution net?
Yes No
 - 5.1. If you answered Yes, in what location?
In the Library Other places in the Institution Other places
 - 5.2. What type of information resources do you use?
Bibliographic Data Bases (such as Web of Knowledge, SCOPUS and B-on (Library of Knowledge Online Portuguese Consortium) e-books Full text journals
 6. In a scale from Bad to Very Good give an overall grade to the Library or Documentation Center services.
Bad Mediocre Satisfactory Good Very Good
 7. Suggestions. Indicate any suggestion you may have to improve the quality of the existing services. If you have suggestion regarding other services that the Library or Documentation Center could offer to improve its performance, indicate them too.
-
-

Thank you!

ANNEX B – Librarians’ Questionnaire

Library or Documentation Center

1 – The size of the population under study is represented by the potential users of the Library or Documentation Center.

Total number of students (undergraduate, master and PhD students)

Number of Professors and Teaching Assistants

Number of Researchers

Number of Non-Teaching Staff

Number of potential users (equal to a)+b)+c)+d))?

2 – Based on the *CAF-Balanced Scorecard* mixed model the following criteria will be evaluated: leadership; planning and strategy; management of resources and partnerships; management of internal processes; the client; the staff; and, the impact on society. These criteria are associated with performance indicators defined by ISO11620 and ISO2789.

2.1 – Leadership

Do you define and divulge the concepts of mission and vision of the Library or Documentation Center?

Yes No

b) If Yes, in what form?

- In a brochure of the Library.
- In the Internet page of the Library.
- Other. Which one?

If No, why?

Do you have a management system of the Library based on the knowledge of the users needs and the degree of satisfaction of the users and the staff of the library? Yes No

If Yes, in which way?

- Creation of new services following the users suggestions.
- Promoting the dialogue with the staff so as to obtain suggestions to improve the service processes and quality.
- Other. Which one?

If No, why?

Do you promote learning activities to improve the performance of the Library services? Yes No

If Yes, how?

- Participate in Training Programs
- Incentive the other staff to participate in Training Programs
- Other. Which one?

If No, why?

2.2 – Planning and Strategy

Do you perform surveys to the users of the Library or Documentation Center?

Yes No

Do you do Activity Reports based on the needs of the users and the staff?

Yes No

If No, why?

Do you collect data regarding performance to be used for the purpose of *benchmarking* ?

Yes No

2.3- Management of Resources and Partnerships

a) Dimension of the collection

Number of monographs?

Number of journals (print version)?

Number of e-books?

Number of bibliographic data bases?

Number of electronic subscriptions?

b) The Library has a computerized open access catalogue? Yes No

c) Number of seating places in the Library

Do you establish partnerships so as to maximize benefits and minimize costs?

Yes No

If Yes, which ones?

Participation in closed consortiums, for example B-on (Library of Knowledge Online Portuguese Consortium).

Participation in open consortiums, Which?

Other. Which?

2.4 – Management of Internal Processes

What is the average time to provide a document that does not exist in the Library or Documentation Center (acquisition of monographs or scientific articles)?

3 weeks

1 month

2 months

Other. Which?

What is the average time to retrieve a free access document (for a sample of 30 tests)

What is the percentage use of the bibliographic electronic resources available in the Library or Documentation Center (based on question 5 of the user questionnaire)

2.5 – Client

Number of visits *per capita* in the period from October 15 to November 15.

Number of loans *per capita during 2005*.

Indicate the average of the overall degree of satisfaction obtained in the users survey.

Number of the library staff

Indicate the average of the staff satisfaction degree, obtained in the staff questionnaire.

2.6 – Impact on Society

Number of scientific articles published by the users of the Library or Documentation Center during 2005?

Number of articles or communications of the Library or Documentation Center staff during 2005?

Number of Training Programs directed to the users during the academic year 2005/2006?

In your activities do you follow sustained development principles?

Yes No

If Yes, which ones?

Provision of separate containers for material disposal

Utilization of recycled paper

Utilization of toners and ink cartridges which can be recycled

Utilization of fluorescent light bulbs.

Others. Which?

Thank you!

ANNEX C - Other Staff Questionnaire

Library or Documentation Center

- 1 - In a scale from Bad to Very Good classify the degree of satisfaction relatively to the functions/ activities that you perform in the Library or Documentation Center.
Bad Mediocre Satisfactory Good Very Good
- 2 - Would you like to participate in a Training Program?
Yes No
If Yes, which one?
- 3 - Do you have any suggestion to improve the quality of the services provided to the users?
Yes No
If Yes, which one?
- 4 - Suggestions. Indicate any suggestion you may have to improve the quality of the existing services.

Thank you!