

Assessing the economic value of academic libraries: a case study in the University of Lisbon

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Abstract: The assessment of academic libraries is an important management issue of the services and of Library Advocacy. Determining the monetary value of the services may be an interesting element at a time when there are constraints on the budgets of the institutions. The main aim of this paper is to calculate the tangible value in monetary terms of certain services of two libraries of the University of Lisbon. In this task we use six statistical indicators: document loans, accesses to Internet; accesses to computers, accesses to journals, training and interlibrary loans. The method to calculate the monetary value for a specialized quality service is to verify the current market value of the service, i.e., the current price of the service that can be bought or sold in the free market (ISO16439:2014). According to this investigation we calculate the monetary values for these indicators. The cost-benefit value is also calculated, that is, the return on investment, the relationship between the total economic benefit of these indicators and the total resources invested in the library according to these indicators.

Keywords: Academic Library, Value, Accountability, Assessment

1. Introduction

In academic libraries, the economic and social pressure to affirm the role of libraries depends on showing their value, particularly as regards return on investment. Like all institutions, the university library can be evaluated quantitatively regarding its activity. This kind of study is important because it advocates accountability, by reported economic value of the library to users, patrons and society in general. Also, it points to the following benefits: increasing performance, making corrections and improving efficacy and efficiency. Concerning ISO 16439:2014, value is the “importance that

stakeholders (funding institutions, politicians, the public, users, and staff) attach to libraries and which is related to the perception of actual or potential benefit” and the monetary value can be included in this concept. This study analyses just that – how libraries can prove their importance by resorting to evaluations of their economic value. This study consists of a cross-sectional evaluation carried out in three higher education institutions of the University of Lisbon, in Portugal, regarding the perceived value of their libraries. An analysis of indicators through an internal survey was applied to the statistical data of the libraries in question. The survey is in conformity with some of the indicators of the ISO 16439 standards, which capture the economic value of libraries, but it is based on calculation software built to estimate the annual savings of public library users in Portugal. Thus, with this tool it is possible to measure the global value of return on investment, and contribute to the affirmation of these institutions’ social importance.

2. Literature review

Higher education libraries are struggling more and more with the management of scarce resources and with the need to prove to stakeholders that it is necessary to maintain or increase the investment made in them. The current debate regarding the evaluation of libraries has focused on performance outcomes, looking into how users are affected by services and benefit from their actions (Standards for libraries in higher education, 2011). However, it is also urgent to understand the economic value of libraries, broadening their accountability, because it is possible to check their impact and based library evaluation on monetary indicators too (ISO, 2014, p. 57).

Since the turn of the century, the ACRL’s Value of Academic Libraries Initiative (Oakleaf, 2010) has promoted reflection about the role of libraries and their contribution to the mission and objectives of higher education institutions, fostering conversation on assessment, accountability, and value. The main objective was to “help academic librarians participate in the conversation and to identify resources to support them in demonstrating the value of academic libraries in clear, measurable ways” (Oakleaf, 2010, p. 8). In the same document we find recognition on the examples of other types of libraries (school, public or specialised libraries), and how they can serve as inspiration with their approaches and examples in the field of library value evaluation.

Over time, the value of libraries has been addressed from several viewpoints. Whitehall (1995) had already advocated an economic analysis of libraries by providing useful data and supporting investment decisions and choices. Though focused on public libraries, Missingham (2005) also stated that there are advantages related to the perceptions stakeholders start having and the benefits of better allocating investment to services with higher return.

On the other hand, Luther (2008) presented a case study showing how investment in academic libraries is a gain for research, in particular, and for the

university in general, highlighting scientific production, sponsorships and grants earned, generated by the investment made in acquired electronic resources. In turn, some authors (Nitecki, Wiggins, Turner, 2015; Mckenemy 2007) stress that a quantitative evaluation of libraries is not enough, identifying intangible values such as well-being resulting from the experience of reading. Tenopir (2011), Matheus (2015), Urquhart (2015, 2018), Urquhar & Turner (2016), Urquhar & Tbaishat (2016) and Appleton (2017) focus above all on the principles that sustain library evaluation, namely enhancing tools, methods or key indicators used to evaluate impact and performance, to then reflect on how academic libraries should use results to ensure support from the surrounding community. Salisbury & Peasley (2018) also agree with the need to show the value of the library, stating that librarians should programmatically collect and collate evidence to demonstrate value through a variety of means, and that this should be done within a narrative that ensures the translation of current inputs, librarian's roles, and of everything involving library performance, for students' success and for meeting the goals and the mission of the university tomorrow. Therefore, there are several ways to perceive the value of libraries. At a first level, this value can be measured in accounting terms, by calculating all the money spent on collections, materials, salaries, furniture, among other items which ensure that the library stays open.

On the other hand, the global tendency has been to increasingly evaluate services provided and the value these represent for whoever uses them. This tendency is more based on the concept of "value on investment". Regardless of these tendencies, many authors agree that it is useful to evaluate libraries in a consistent, diversified manner. Therefore, the evaluation of the monetary value continues to be an important contribution to the global perception we can have of the value of our libraries.

3. Methods

This investigation turns to a quantitative analysis, using statistical indicators to calculate the economic value of a group of services. This paper is a small part of a broader study whose aim is to make a monetary calculation of the services and resources to establish the cost-benefit value and the economic impact of academic libraries of the University of Lisbon.

The study uses impact indicators defined by the ISO 16439: 2014(E) international standards - *Information and documentation -- Methods and procedures for assessing the impact of libraries*, issue 10.2.3 *Library Value Calculator* (ISO, 2014, p.59).

In Table 1, we can see the different services and the unit cost assigned (based on arithmetic average) in Portuguese public higher education academic libraries. We feel these values may be over-evaluated, but we considered that scientific information in Portugal is expensive because most of it is imported from several

countries around the world. Also, as we are calculating costs for publications in the field of medicine and health, prices may be considered excessively high. As stated on ISO (2014, p. 58), “the method assumes that costs of substitute the library services provide useful estimates of the value of library services. (...) those services must be worth to them [people] at least what they paid to substitute them.” This is related also with the “current market value of the service, i.e. the current price at which service can be bought or sold in the free market” (ISO, 2014, p. 58). Having this in mind, we were inspired by the example of specified services costs, given in ISO, but also in specific and contextualized country data, for instance, in the internet access costs.

Table 1. Associated services and costs

Library service	Price per unit (Euros)
Book loan	14.00
Journals - online use	6.50
Training per hour	6.50
Internet access per hour	0.50
Scientific papers and Interlibrary loan (cost of two IFLA voucher, usually requested in these services)	16.00

This methodology was also based on the calculation approach for public libraries, created by the Portuguese Association of Librarians, Archivists and Documentalists – Public Libraries Working Group, in 2005.

This study took place in three schools of the University of Lisbon – the Faculty of Dental Medicine (FMDUL), the Faculty of Psychology (FP) and the Institute of Education (IE). The academic universe under investigation is formed by a population of around 600 students, 128 teachers and researchers and 63 staff members of FMDUL; 959 students, 58 teachers, 5 researchers and 27 staff members of FP; and 827 students, 61 teachers, 4 researchers and 27 staff members of IE.

Table 2 shows the universe benefitting from the resources of the libraries under study.

Table 2. Constitution of the population

Universe				
Type	FMD	FP	IE	Total
Teachers	128	58	61	247
Researchers	0	5	4	9
Students	600	959	827	2386
Staff	63	27	27	117
Totals	791	1049	919	2759
Total				2759

4. Results

Every institution (and services that are part of it) is accountable for its activity, and libraries are no exception. These are also confronted about why they exist when they are, in fact, essential to help their users access and manage the current flood of information. Thus, revealing figures closer to the reality of the general public and creating scenarios that concern them directly (concepts such as “how much can I save?”) are important in that:

- they allow performance to be improved and amendments to be introduced;
- they inform users and non-users about the value of the services provided, and create empathy with publics (these exercises show the immediate, palpable benefit).

To have an idea of tangible value we turned to the example set out in ISO 16439 standard (2014, p. 59) for all values. Specifically regarding access to the internet, we resorted to the value indicated by ANACOM (national authority of communications) and recommended on a national level, by the Portuguese Association of Librarians. This professional association is carrying out a campaign for the valuation of public libraries, called WE ARE LIBRARIES. In this campaign there is a tool (Calculator) which provides a tangible return value for the community regarding its use of the services provided.

The Portuguese Association of Librarians, which is carrying out a campaign for the valuation of public libraries, called WE ARE LIBRARIES. In this campaign there is a tool (Calculator) which provides a tangible return value for the community regarding its use of the services provided. We used to this tool to evaluate the FP, IE and FMD libraries. To reach total values, we use reference amounts by default. In the case of higher education libraries, these values are

even more flawed if we consider that scientific literature and data bases have a significantly higher cost and that there is already a 4 year gap since the publication of the standards.

Even so, and adapting the US dollars to euros, this exercise reveals surprising results. The followed items in this study were measured as described below:

- **LOANS/ACCESS TO BOOKS** (loans, renewals and on-site reading): a value of € **14**/physical unit for loans/access to books was attributed, according to the average cost (by default), for literature of a general character;
- **JOURNALS/PAPERS**: a value of € **6,5**/unit (journal or paper, print or digital) was applied, according to the (lower) average price of the main national (generalist) journals, and taking into account on-site consultations and full downloads of scientific papers;
- **INTERNET**: the value/hour of access to internet - € **0.50** – was defined considering the rates of Anacom 2015, and the number of accesses was considered to be same as the number of presence in the library, per day;
- **TRAINING**: a value of € **6.5**/hour was applied (also according to the average price of training actions in Lisbon, Leiria and Bragança, in 2015 (numbers of students* 2h);
- **INTERLIBRARIES**: the value for two IFLA voucher/ILL was attributed, **16 €**.
- Therefore:

Table 3. Data on the 2017 services' use Euros

	FP	IE	FMD	TOTAL	Value € 3 institutions
Loans/access to books	10660	6002	1084	17746	248.444,00
Internet	67201	40065	16497	123763	61.881,50
Journals/ papers	100099	81312	0	181411	1.179.171,50
Training	842	570	500	1912	12.428,00
Interlibraries	51	29	75	155	2.480,00
					1.504.405,00 €

The environmental value of certain actions can also be calculated, like taking into account savings from less tree felling thanks to providing a digitalisation service. In this case, and considering only the FP / IE library, this service has already carried out 179,673 digitalisations. If we consider the commonly accepted number of 20 reams (10,000 A4 sheets) per average-sized tree, the trees saved from felling already amount to 18.

5. Results discussion

Taking these data into consideration, we find extremely high values. In fact, the statistical data of use of the libraries reveal a regular, intensive use of resources and services made available, perfectly justifying the annual investment put in, and highlighting the use of specific scientific and technical information. Even though one of the schools does not provide the possibility of extracting data for downloads of full articles, the figures of the other schools are significant.

We consider the investment in this products and services to be fully justified, given the huge impact they have no research results – more searches generate more articles and book editions, greater impact and visibility of authors and researchers and, finally, more funds raised for the development of research projects. They are also likely to generate better grounded and scientifically sustained academic works, thus fostering further academic success.

Now let's look at the investment made in 2017 regarding the purchase of books, journals and data bases.

Table 4. Data on the 2017 services' investment in Euros

Aquisitions (in euros)	FP	IE	FMD	TOTAL
Books	2.263	1.901	1.522	5.686
Journals and Databases	42.308	20.772	0	63.080
				68.766

Considering the number of potential users of these resources (2,759) and simply by looking at the values of the purchases (68,766.00) we may conclude that in 2017 a value of around 25 euros *per capita* was invested in the universe under analysis. This investment produced a return of over 1.5 million in perceived monetary value in the use of the resources studied, that is, around 545 euros per capita. Regardless of the linearity of this analysis, which lack other specific data, the results are in alignment with the literature review, which shows a much higher return on investment in all cases. Thus, this study intended to examine the value of the main services provided by the libraries of three schools of the university. Taking into account loans, access to the internet, downloads of full text articles (corresponding to articles of specific, paid databases), training given

by the libraries and interlibrary loans, we reach rather surprising amounts for the monetary volume that they represent. Without the possibility of verifying fixed costs related to building maintenance, water, electricity, heating and so on, as well as costs with staff and other maintenance costs, we cannot reach definitive conclusions about the cost-benefit relationship. However, given the disparity of the values between the investment *per capita* (25 euros) and the return the services studied represent (545 euros), it is perfectly viable to ascertain that even if we deduct those costs, there continue to be clear benefits in investing in libraries. Furthermore, these libraries do not represent expenses or capital losses at all, nor do they encumber the institutions they are part of; rather, they are catalysts of investment, for through the resources provided they generate more value, more knowledge and more academic success for those benefitting from them.

6. Conclusions

Academic libraries have a vital role in Higher Education institutions as they provide permanent access to knowledge, to up-dated and quality scientific information, for teachers, researchers, students, staff and society in general.

In times of economic crisis and budgetary constraints, establishing the economic value of services in institutions is very important to help decision making and for Library Advocacy.

This study is part of a broader investigation which seeks to understand the value of academic libraries in a Portuguese university. The part of the study which is hereby presented aimed to gain a better understanding of the monetary value associated with library services, based on the data provided by ISO16439 (2014).

This brief study only took into consideration the indicators of chapter 10.2.3 *Library Value Calculator* (ISO, 2014, p.59). It is important to consider more indicators in future investigations. This communication is a possible approach to quantify the cost-benefit which is useful and confirms that the ISO16439 standards associated with other methods are good tools of monetary valuation of academic library services.

Case studies such as this one, with several libraries of the same University, or with other national or foreign higher education institutions, are practices to be deployed in order to analyse best practices and carry out improvements.

This work confirms that quantitative data show return on investment as Tenopir (2017) states: the "quantitative data can show Return on Investment (ROI) and trends, while qualitative data can tell a story or put a personal face on data... libraries need to focus on measuring outcomes, not inputs, and use this evidence to demonstrate the role of the library in helping with the success of the faculty, graduate students, and undergraduate students." However, as the same author

refers, these investigations should be complemented with assessment of the impact and proof that these services have in the success of learning, teaching and research processes, which are the activities carried out in the institutions hosting these libraries.

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