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Assessing the impact of libraries – the role of ISO 16439

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Abstract

Purpose

Library impact and how to evaluate it has been debated for a number of years. While the activity – the busy-ness – of the library is now routinely measured and described, the difference the library makes is less tangible and harder to measure. Libraries in all sectors and worldwide are grappling with this issue.

Design/methodology/approach

The first international standard concerning library impact, *ISO 16439 Information and documentation – Methods and procedures for assessing the impact of libraries*, was published in 2014 after several years in development.

Findings

The standard describes a range of methods for assessing library impact which have been used across the world in a variety of libraries in all sectors.

Originality/value

This paper summarises the key methods described in the standard, and gives references for further reading.

Keywords

Impact; ISO 16439; Methods; library; measurement; standards

Introduction

Library performance has been measured and assessed by means of the resources put into the service and the use made of those resources for many years. Evaluation also routinely extends to measures of customer satisfaction. Whilst valuable in terms of running an efficient and cost-effective service, library statistics do not answer the fundamental question, increasingly asked by both librarians and other stakeholders – what difference does the library service make to an individual or a community? As a result, librarians and information scientists have begun to develop ways of measuring the impact of library services.

Library impact is not an exact science. It might be thought that something intangible and difficult to measure is not a proper subject for ISO standards, which are generally very precise in their specifications. From about 2000, library impact has gained increasing importance as publically funded organisations have come under ever greater scrutiny to demonstrate their value to stakeholders and justify their funding. Covey (2002) described the state of academic library performance measurement at that time as ‘often ineffective and inefficient’ (p156). She also noted increasing demands for accountability on the part of

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3 both governments and institutions. Library assessment has moved on, and is now
4 embedded in practice, but the demands for accountability have grown, and there has been
5 an increasing appreciation that the more easily measured concepts of inputs and outputs –
6 resources and activities – while remaining necessary, are no longer deemed sufficient to
7 measure library performance and value. ISO 16439 was developed in response to a
8 perceived demand for guidance on effective methods of assessing impact in libraries of all
9 types across the world.
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13 An international committee of experts, including the author of this summary, collaborated
14 to produce the standard, which describes a wide variety of methods and techniques, all of
15 which have been tested in libraries and found to be reliable methods of assessing library
16 impact. The process began in 2010, and the first edition of the standard was published in
17 2014. The committee – known as ISO TC 46/SC 8/WG10 – continues to collect relevant new
18 material for future editions of the standard, which will be formally reviewed in 2019.
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22 ISO 16439 comprises ten chapters, covering the scope of the standard, and giving normative
23 references and defining key terms used, before moving on to a detailed definition and
24 description of library impact. Methods for assessing impact are separated into those using
25 inferred evidence, solicited evidence and observed evidence, and ways of combining
26 methods are described. The economic impact of libraries is considered separately. A series
27 of annexes give examples of impact survey questions suitable for a range of circumstances,
28 points to take into account when choosing a method, and describing how library impact
29 assessment fits within broader institutional assessment practices.
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34 This paper summarises the main sections of the standard, focussing in particular on those
35 aspects and methods which are applicable to libraries in higher education.
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38 **What is library impact?**

39 When considering library performance, a number of terms are commonly used to describe
40 the basic elements for measurement:
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- 42 • Input – the resources provided to the service (e.g. stock, staffing, premises, finance)
- 43 • Output – the use made of the service (e.g. loans, downloads, visits)
- 44 • Outcome – the effect of the outputs, in relation to the service's goals and objectives
45 (e.g. user satisfaction)
- 46 • Impact – the difference the library service makes to individuals and/or society (e.g.
47 qualifications gained, economic impact)
- 48 • Value – the importance stakeholders attach to the library service (e.g. contribution
49 to culture, student recruitment)
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54 Library processes transform inputs into outputs, which lead to outcomes, and all of these
55 are routinely measured by libraries of all sectors. Impact is less tangible, and value – other
56 than in the sense of economic value for money – even more so. Measuring these aspects of
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3 library performance is becoming increasingly important, as libraries compete within their
4 parent institutions for limited resources.
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6 ISO 16439 notes that library impact can have many aspects. It can be immediate, such as
7 finding the required reference for an essay, or long-term, for example improvements in
8 information literacy. It may be limited, with a small increment in skills, or far-reaching,
9 changing someone's life. It is generally thought of as positive, but a bad library experience
10 can have a negative impact, discouraging repeated use. Types and effects of impact will also
11 differ according to who or what is being impacted – individual users; the parent institution;
12 or wider society, for example.
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16 For individual library users, the resources and services provided by the library service may
17 result in improved skills or competencies, changes in attitudes or behaviours, greater
18 academic or career success, or improved wellbeing, for example. For an academic institution,
19 the library can contribute to prestige and reputation, increased institutional funding for
20 research and can help to attract high quality staff and students.
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24 It is also important to note that different elements of the library service may have different
25 impacts on users, and elements may have different impacts on different stakeholders.
26 Comprehensive collections based around reading lists can be expected to have an impact on
27 student assignments and attainment, while journal collections may have more relevance to
28 researchers, with potential impacts in the area of PhD completions and successful funding
29 applications – potentially impacting on the institution more widely. A leisure reading
30 collection may have an impact on the health and well-being of both staff and students.
31 These separate impacts can all be measured – what is more difficult is to describe a single,
32 overarching impact for the service as a whole.
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37 **Methods for assessing library impact**

38 Because library impact is relatively intangible, assessing it presents a number of challenges.
39 It is a more demanding process than counting inputs and outputs, and takes considerable
40 time and effort. For anything other than short-term, immediate, impact, longitudinal studies
41 are needed. Further, the library will not be the only factor in any given impact, and isolating
42 its contribution is not always straightforward.
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46 Library impacts generally cannot be measured directly, and surrogate or proxy measures are
47 required. Evidence of impact can be inferred, through output data, performance indicators
48 or user satisfaction, for example. It can also be solicited by consulting users, or it can be
49 observed (Streatfield, 2002). The techniques used are not new, nor are they unique to
50 impact measurement, but draw on the range of research methodologies employed
51 throughout the social sciences. This section of the paper summarises the various techniques
52 and types of impact evidence included in ISO16349.
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Inferred evidence

Chapter 6 deals with inferred evidence of impact. Library statistics are routinely collected and monitored; they do not, of themselves, measure library impact, but can be used to point to library impact. For example, changes in users' behaviour and skill levels can be demonstrated by time series data on usage, or data showing how the profile of users has changed. Increasing levels of use might suggest that users are finding the services they use beneficial; similarly, increased participation from one segment of the population may suggest that services for that target group are relevant and well-received. Times series of performance indicators can be used in a similar way. For example, increased attendance at user training sessions may suggest that users gain benefit from the sessions.

User satisfaction is not synonymous with impact. It is possible for a user to be completely satisfied with a service which has had no impact at all. However, high levels of satisfaction with some services in particular are likely to be linked to the benefits gained from those services. For example, high levels of satisfaction with user training are likely to be linked with the acquisition of relevant skills.

Note that data from sources other than the library can contribute to the evidence base. Of particular relevance to academic libraries is data on student attainment, although this can be fraught with ethical issues, and the library is not the only influence on student attainment.

It is important to note that such evidence cannot stand alone to demonstrate impact, but must be supported by other methods.

Solicited evidence

Chapter 7 of ISO 16439 describes solicited evidence, which is obtained directly from users, generally by means of a questionnaire survey, although other methods such as interviews or focus groups are sometimes used. Questions about the impact of using the library service can be the focus of the questionnaire, or may be inserted into a broader instrument seeking information about library use and/or satisfaction, for example. Questionnaires relating to a particular activity can be distributed at the time, or, if a record of attendance is kept, some time later – for example, have you found the information provided in the session useful for your studies? An alternative approach puts questions in the context of what users might have done had the library service not been available to them.

Interviews and focus groups allow for more in-depth investigation of issues, and teasing out the detail of library impact. They can also deal with more general questions – what is the major benefit to you when using the library? Such methods are resource intensive, but generate a wealth of qualitative data on the impact of the library across a range of activities. Case studies are not widely used to provide evidence of impact, but can be an additional source of in-depth data, if sufficient resources are available to support them.

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3 More informal anecdotal evidence can also be obtained, from personal experiences
4 contributed by users or staff. Such evidence is not collected systematically, nor is it
5 empirically tested, so it cannot be considered to be scientifically sound, but it has value in
6 pointing out areas of potential impact for further investigation, and for illustrating the
7 results of other methods.
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10 **Observed evidence**

11 Chapter 8 covers a variety of methods for gathering evidence by observation, including
12 observation of users by researchers or remotely via video-recording or log analysis, as well
13 as self-recording by users, and analysis of the citations made in written assignments.
14 Observation can be structured or unstructured, carried out openly with the knowledge of
15 the observed person, or covertly, with the observer participating in activities or watching
16 from the side-lines. As with other methods, evidence of impact can be obtained by
17 collecting data before and after a library intervention, identifying changes in behaviour,
18 skills or attitudes.
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23 Self recording by users is included as an important tool, allowing the collection of
24 longitudinal data with minimal cost. Such evidence is generated by asking users to keep a
25 diary recording their behaviours or attitudes in a particular area over a period of time. These
26 diaries are then analysed for changes in patterns of use in relation to interactions with
27 library services.
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31 A further type of observed evidence, of particular relevance to academic libraries, can be
32 obtained by testing the knowledge, competencies and skills of library users, and is a well-
33 established practice, particularly in the US. Response rates are generally high, and the
34 results are clear and unambiguous. Such tests can be used to indicate impact when used
35 before and after instruction, where significant improvements in performance indicate the
36 impact of the course.
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40 Citations in student papers or doctoral theses can also be used to assess the library's impact
41 on the information literacy of students (Tuñon & Brydges, 2005). The extent to which
42 scholarly sources are used, and cited appropriately, demonstrates the effectiveness of
43 information skills training, particularly when groups receiving different levels of training are
44 compared, or evaluating work before and after training (Hurst & Leonard, 2007).
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48 **Combining methods - some examples**

49 Many of the methods described in detail in ISO 16439 are most effective in demonstrating
50 impact when used in combination, and this aspect is covered in Chapter 9, with a number of
51 examples being provided. They may be purely quantitative – for example comparing library
52 use data with institutional data to identify statistical relationships between library use and
53 performance. They may be qualitative, for example examining relationships between
54 actions and outcomes. They may combine both, integrating student test results with
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3 interview findings and self-assessment, for example. Qualitative methods also add context
4 and depth to quantitative data, to identify and illustrate impacts.
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6 One area in which methods have been combined to demonstrate impact is that of student
7 attainment. A number of studies have been carried out comparing library usage with
8 student assessment data:
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- 10 • In Australia, Cox & Jantti (2012) have shown that increased use of the library's
11 electronic resources is associated with better student performance
- 12 • In the UK, Stone *et al.* (2011) showed a correlation between library use and student
13 attainment. Subsequent work confirmed these results across eight universities
14 (Stone & Ramsden 2014), although the authors stress that correlation does not imply
15 causation.
- 16 • In the USA, Bowles-Terry (2012) found that students who had received information
17 literacy instruction achieved better academic results than those who had not,
18 supported by qualitative findings from focus groups.
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20 Academic libraries have also been shown to have other impacts. One US study found a
21 positive correlation between the use of library resources and successful grant applications,
22 for example (Tenopir *et al.*, 2010).
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24 **Assessing the economic value of libraries**

25 The final section of the standard (Chapter 10) deals with the slightly different topic of
26 assessing the economic value of libraries. This uses rather different methods, which may be
27 less familiar to library and information professionals. There are two broad approaches which
28 are described – identifying the monetary value of library services to users, and identifying
29 the broader influence of the library on the economic life of the community, region, or
30 national economy. The first of these may be more relevant to academic libraries,
31 particularly if that value can be shown to be greater than the level of the institutional
32 investment in the library.
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34 The standard recognises that identifying the monetary value of library services is not a trivial
35 task, noting that it can be accomplished in several ways, which, in practice, may need to be
36 combined to give a complete picture. For services which are available commercially, a
37 replacement cost can be calculated – for example the cost of purchasing a book or journal
38 article as replacement for a loan or download. Establishing a surrogate price for other
39 services is less clear, however. The monetary value of the service can be estimated by
40 multiplying the unit cost of each service used by the number of uses of that service.
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42 A second method described is based on the premise that the value of the library service
43 must be at least equal to the value the user places on the time and effort required to use
44 the service. This is perhaps less relevant to academic libraries, where students at least are
45 not salaried so that costing their time is not possible.
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3 Asking users what they think the library service is worth is a third option described, but it is
4 noted that this is very subjective. It is most formally expressed as contingent valuation,
5 which is an economic method to estimate the benefits of a non-priced service by
6 considering what would happen if it were not available. It has been most frequently used in
7 the public library sector, where questions of value can be put in terms of higher or lower
8 taxation, although perhaps the best known example is a study by the British Library,
9 concluding that for every £1 spent on the library, more than £4 of value was generated
10 (Pung *et al.*, 2004).
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14 **Choosing a method**

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16 As with all research – and measuring the impact of your library is essentially research – the
17 methods you choose will depend on the questions you seek to answer. This aspect is
18 covered in an annex to the main standard (Annex B). Impact studies must start with
19 determining which area of possible impact is to be investigated, and what kinds of data are
20 required to demonstrate that impact. The methods, and scope of the study, will also depend
21 on the resources and expertise available to carry it out.
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25 Changes in skills and competencies are frequently identified by tests, but other methods
26 such as observation or solicited evidence can also be used. Changes in attitudes and
27 behaviours can be demonstrated by surveys, interviews or focus groups, and can be
28 corroborated by data on library use. Academic success is measured by coursework marks or
29 degree level, and may require the cooperation of institutional administrators to associate
30 this with library use without breaching confidentiality. In all cases, a combination of
31 qualitative and quantitative methods can provide the most convincing evidence.
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35 **Conclusion**

36 In order to assess the impact of library services, it is helpful to break down the process into
37 its component parts. Firstly, consider the areas of the service for which you want to identify
38 an impact. This may be something focussed, such as information literacy training, or more
39 general, such as resource provision.
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43 Secondly, focus on what impacts you might expect those areas of the service to have, and
44 on whom. In the example of information literacy training, the expected impact would be
45 increased skills; for resource provision, one impact may be improved student performance.
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48 Thirdly, consider what might indicate that those impacts have been achieved – the evidence
49 you need to demonstrate the impact. Improved information literacy skills might be shown
50 by more appropriate use of sources, or better referencing, for example.
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53 The next step is to identify and define the measures you need to collect to provide that
54 evidence, and where the data might be obtained. These could include data from beyond the
55 library, particularly when it comes to student attainment. Other data will come from library
56 sources; some will need to be collected specifically for the purpose. It is only at this stage
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3 that the measures described in ISO16489 can be brought into the process, providing a set of
4 standardised methods and examples of surveys which can be used.
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