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Information and documentation — Methods and procedures for assessing the impact of libraries

Information et documentation — Méthodes et procédures pour évaluer l'impact des bibliothèques

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Foreword

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The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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The committee responsible for this document is ISO/TC 46, *Information and documentation*, Subcommittee SC 8, *Quality — Statistics and performance evaluation*.

Introduction

This International Standard provides guidance to the library community on methods for assessing the impact and value of libraries. It was developed in response to worldwide demand for specifications of library impact assessment.

The methods described in this International Standard do not reflect all possible methods or evaluation techniques, but are those seen to be most heavily used and that have proved most effective for assessing library impact. This International Standard is not intended to exclude the use of assessment methods not specified in it.

There are many different types of libraries, with different tasks and populations, having a range of unique characteristics (structure, funding, governance, etc.), and affected by a number of situational factors. Since there is such a wide variation around the world, it is important to understand that not all methods described in this International Standard are useful to all libraries.

Annex A of this International Standard gives examples of impact surveys. Annex B recommends a choice of methods for different purposes. Annex C describes the case that library impact is assessed within broader institutional and organisational assessment.

Information and documentation — Methods and procedures for assessing the impact of libraries

1 Scope

This International Standard defines terms for impact assessment of libraries and specifies methods for such assessment

— for the purpose of strategic planning and internal quality management of libraries;

— to facilitate comparison of library impact over time and between libraries of similar type and mission;

— to promote the libraries' role and value for learning and research, education and culture, social and economic life;

— to support political decisions on levels of service and strategic goals for libraries.

This International Standard considers the impact of libraries on individuals, institutions and society. It is applicable to all types of libraries in all countries. However, not all methods described in this International Standard apply to all libraries. Limitations on the applicability of individual methods are specified in the descriptions.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 2789:2013, *Information and documentation — International library statistics*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1
academic library
library whose primary function is to cover the information needs of learning and research

Note 1 to entry: This includes libraries of institutions of higher education and general research libraries.

[SOURCE: ISO 2789:2013, definition 2.1.1]

3.2
access
ability of reaching and using a service or facility

3.3
accessibility
ease of reaching and using a service or facility

[SOURCE: ISO 11620:—, definition 3.2]

3.4
active user
registered user who has visited or made use of library facilities or services during the reporting period

Note 1 to entry: This may include the use of electronic library services, if it is possible to identify electronic use and virtual visits of the individual user, or if data can be assessed with the help of surveys.

[SOURCE: ISO 2789:2013, definition 2.2.3]

3.5
anecdotal evidence
evidence based on anecdotes or stories, obtained informally from personal observations and experiences, not collected systematically nor empirically tested

3.6
availability
degree to which content, documents, facilities or services are actually provided by the library at the time required by users

[SOURCE: ISO 11620:—, definition 3.6]

3.7
benefit
helpful or good effect, or something intended to help

3.8
consumer surplus
amount of money by which consumers value a product or service above its purchase price

3.9
contingent valuation
method for assessing the economic value of non-profit institutions and projects of public utility depending on potential users' responses to survey questions, such as what they are willing to pay for a benefit or feature (willingness-to-pay), or what they would accept as financial compensation if a certain benefit or feature was missing (willingness-to-accept)

Note 1 to entry: The method is used in environmental protection and health care, for example.

3.10
cost-benefit analysis
process that assesses the relation between the cost of an undertaking and the monetary value of the resulting benefits

3.11
critical incident technique
CIT
research approach designed to draw out the most memorable aspects of an event or experience

Note 1 to entry: Critical incident technique can be used in individual interviews, focus group interviews or surveys.

3.12
cultural economics
branch of economics that studies the relation of culture to economic outcomes and explores cultural phenomena as economic factors

3.13
data mining
computational process that identifies patterns by analysing quantitative data from different perspectives and dimensions, categorizing it, and summarizing potential relationships and impacts

3.14
digitization
process of converting analogue materials into digital form

Note 1 to entry: Digitization for document supply from the library collection to a user or institution is excluded

Note 2 to entry: Digitization for preservation purposes is included.

Note 3 to entry: Mass digitization is included.

Note 4 to entry: Purchase of electronic copies for replacing print copies is excluded.

[SOURCE: ISO 2789:2013, definition 2.3.15]

3.15
document
recorded information or material object, which can be treated as a unit in a documentation process

Note 1 to entry: Documents can differ in form and characteristics.

[SOURCE: ISO 5127:2001, definition 1.2.02]

3.16
economic impact
effect of a policy, institution, programme, or event on the economy of a given area

Note 1 to entry: Economic impact is usually measured in terms of changes in economic growth (output or value added) and associated changes in jobs (employment) and income (wages).

3.17
effectiveness
measure of the degree to which given objectives are achieved

Note 1 to entry: An activity is effective if it maximizes the results it was established to produce.

[SOURCE: ISO 11620:—, definition 3.15]

3.18
efficiency
measure of the utilization of resources to realize a given objective

Note 1 to entry: An activity is efficient if it minimizes the use of resources, or produces better performance with the same resources.

[SOURCE: ISO 11620:—, definition 3.16]

3.19
electronic collection
all resources in electronic form in the library collection, whether born digital or digitized

Note 1 to entry: The electronic collection includes databases, electronic serials, and digital documents. Free Internet resources which have been catalogued by the library in its online catalogue or a database should be counted separately.

Note 2 to entry: The resources can be networked, installed on stand-alone workstations or stored on physical carriers.

[SOURCE: ISO 2789:2013, definition 2.3.21]

3.20
electronic service
library service delivered via electronic means, whether from local servers or provided via networks

Note 1 to entry: Electronic library services include the online catalogue, the library website, the electronic collection, electronic document delivery (mediated), electronic reference service, user training by electronic means, services for mobile devices, services for interactive use (including services on social networks), and Internet access offered via the library.

Note 2 to entry: This does not include booking physical services (e.g. rooms or library tours) by electronic means.

[SOURCE: ISO 2789:2013, definition 2.2.8]

3.21
evaluation
process of estimating the effectiveness, efficiency, utility and relevance of a service or facility

[SOURCE: ISO 11620:—, definition 3.19]

3.22
event
pre-arranged activity with cultural, educational, social, political, scholarly, or other intent, e.g. exhibitions, author visits, literary discussions, workshops, etc.

Note 1 to entry: Only events arranged by the library on its own or in partnership with other institutions are included, whether inside or outside the library premises. Events inside the library premises organized by institutions outside the library without the library's cooperation are excluded.

Note 2 to entry: User training lessons and library tours are excluded.

Note 3 to entry: Ongoing programmes are included. Each session of a programme is counted as one event.

Note 4 to entry: Virtual events are included.

[SOURCE: ISO 2789:2013, definition 2.2.9]

3.23
focus group interview
focus group discussion
group interview in the form of a moderated discussion among a small number of selected individuals on topics introduced by the moderator

3.24
goal
desired state of affairs to be achieved by the implementation of agreed policies

[SOURCE: ISO 11620:—, definition 3.24]

3.25
impact
difference or change in an individual or group resulting from the contact with library services

Note 1 to entry: The change can be tangible or intangible.

3.26
information literacy
the ability to recognize a need for information and to identify, retrieve, evaluate, and use information effectively

Note 1 to entry: Literacy in the sense of being able to read and write with a minimal level of proficiency is fundamental for information literacy.

Note 2 to entry: This includes the skills for using information technology to access and retrieve information.

3.27
informational question
directional and/or administrative inquiry delivered to library staff

Note 1 to entry: This includes e.g. questions for locating staff or facilities, questions regarding opening times and registering procedures and questions about handling equipment such as printers or computer terminals.

Note 2 to entry: The question can be delivered personally or by means of telephone, regular mail, fax or electronic media (via email, the library website or other networked communication mechanisms).

[SOURCE: ISO 2789:2013, definition 2.2.13]

3.28
input
contribution of resources in support of a library (e.g. funding, staff, collections, space, equipment)

3.29
Internet access
Internet connection by a user from a workstation owned by the library or from a user's private computer in the library via the library's network

Note 1 to entry: Internet accesses can only be counted if users have registered or authenticated themselves when accessing the Internet.

Note 2 to entry: Internet access via a user's private computer (e.g. laptop or hand-held) via the library's wireless network inside the library should be counted and reported separately.

[SOURCE: ISO 2789:2013, definition 2.2.17]

3.30
interview
oral questioning technique which results in a transfer of information from the interviewee to an interviewer or researcher

Note 1 to entry: This technique obtains direct reactions to questions, in contrast to written questionnaires or self-assessment (self-recording).

Note 2 to entry: Interviews can be subdivided according to the number of interviewees into one-to-one interviews and group interviews.

Note 3 to entry: Interviews can be structured, semi-structured or unstructured.

Note 4 to entry: Where semi-structured or unstructured interviews are used with a group of respondents, these are usually described as focus groups or group discussions.

3.31
library
organization, or part of an organization, the main aim of which is to facilitate the use of such information resources, services and facilities as are required to meet the informational, research, educational, cultural or recreational needs of its users

Note 1 to entry: The supply of the required information resources can be accomplished by building and maintaining a collection and/or by organizing access to information resources.

Note 2 to entry: These are the basic requirements for a library and do not exclude any additional resources and services incidental to its main purpose.

[SOURCE: ISO 2789:2013, definition 2.1.6]

3.32
library collection
all documents provided by a library for its users

Note 1 to entry: Comprises information resources held locally and remote resources for which access rights have been acquired.

Note 2 to entry: Access rights can be acquired by the library itself, by a consortium and/or through external funding.

Note 3 to entry: Acquisition is to be understood as deliberately selecting a document, securing access rights and including it in the online catalogue or other databases of the library. Interlibrary lending and document delivery are excluded.

Note 4 to entry: Does not include links to Internet resources for which the library has not secured access rights by legal agreements (e.g. legal deposit right), license or other contractual and/or cooperative agreement. Free Internet resources which have been catalogued by the library in its online catalogue or a database should be counted separately.

Note 5 to entry: Documents in institutional repositories are not included, but should be counted separately, if the library is involved in collecting the items and/or operating the repository.

[SOURCE: ISO 2789:2013, definition 2.3.28]

3.33
library of an institution of higher education
library whose primary function is to serve students, academic and professional staff in universities and other institutions of education at the third (tertiary) level and above

Note 1 to entry: It may also serve the general public.

[SOURCE: ISO 2789:2013, definition 2.1.7]

3.34
library website
unique domain on the Internet consisting of a collection of web pages that is published by a library to provide access to the library's services and resources

Note 1 to entry: The pages of a website are usually interconnected by the use of hypertext links.

Note 2 to entry: Excludes documents that fit the definitions of electronic collection and free Internet resources that may be linked from the library website.

Note 3 to entry: Excludes web services in the library's domain that are operated on behalf of other organizations.

[SOURCE: ISO 2789:2013, definition 2.2.18]

3.35
longitudinal study
two or more surveys, in which the same or a similar survey instrument is administered more than once to the same population, after a suitable time period has elapsed, to measure changes in patterns of usage, perceptions, attitudes, etc.

3.36
mission
statement approved by the authorities formulating the organization's goals and its choices in services and products development

[SOURCE: ISO 11620:—, definition 3.33]

3.37
national library
library that is responsible for acquiring and conserving copies of all relevant documents in the country in which the library is located; it may function as a legal deposit library

Note 1 to entry: A national library will also normally perform some or all of the following functions: produce the national bibliography, hold and keep up to date a large and representative collection of foreign literature including documents about the country; act as a national bibliographic information centre; compile union catalogues; supervise the administration of other libraries and/or promote collaboration; coordinate a research and development service, etc.

Note 2 to entry: The definition of "national library" allows for more than one national library in a country.

[SOURCE: ISO 2789:2013, definition 2.1.9]

3.38
nominal group interview
group interview without group interaction where each group member writes down answers to the moderator's questions which are then discussed and prioritized one by one by the group

3.39
non-user
person belonging to a specific library's population to be served but not using that library's physical and/or electronic services

Note 1 to entry: The definition includes former users of the library.

3.40
objective
specific target for an activity to be attained as a contribution to achieving the goal of an organization

[SOURCE: ISO 11620:—, definition 3.34]

3.41
observation
method of data collection in which the situation of interest is watched and the relevant facts, actions and behaviours are recorded

Note 1 to entry: There can be rating scales that the researcher would use when observing the behaviour.

3.42
open access
unrestricted access to information, documents or information services

Note 1 to entry: In a narrower sense, this means that informationcontent is made freely available via the Internet.

[SOURCE: ISO 5127:2001, definition 5.2.11, modified – Note 1 has been added.]

3.43
opening hours
hours in a normal week when the main physical services of the library (e.g. reference and loan services, reading rooms) are available to users

[SOURCE: ISO 2789:2013, definition 2.4.7]

3.44
outcome
direct, pre-defined effect of the output related to goals and objectives of the library's planning (e.g. number of users, user satisfaction levels)

Note 1 to entry: This includes outcomes that concern the library's institution or community.

3.45
output
products of library processes (e.g. number of titles catalogued, number of loans, number of reference questions answered)

3.46
performance
effectiveness of the provision of services by the library and the efficiency of the allocation and use of resources in providing services

[SOURCE: ISO 11620:—, definition 3.36]

3.47
performance indicator
numerical, symbolic or verbal expression, derived from library statistics and data used to characterize the performance of a library

[SOURCE: ISO 11620:—, definition 3.37]

3.48
population to be served
number of individuals for whom the library is set up to provide its services and materials

Note 1 to entry: For public libraries, this will normally be the population of the legal service area (authority); for libraries of an institution of higher education, this will normally be the total of academic and professional staff plus students.

[SOURCE: ISO 2789:2013, definition 2.2.25]

3.49
potential user
person belonging to a library's population to be served

Note 1 to entry: This definition includes both users and non-users of the library's services.

3.50
process
set of interrelated or interacting activities which transforms inputs into outputs (e.g. cataloguing, lending, reference service)

3.51
public library
general library that is open to the public and that serves the whole population of a local or regional community and is usually financed, in whole or in part, from public funds

Note 1 to entry: A public library is defined as open to the public, even if its services are primarily intended for a special part of the population to be served, such as children, visually impaired persons, or hospital patients. Its basic services are free of charge or available for a subsidized fee. This definition includes services provided to schools by a public library organization and services provided to public libraries in a region by a regional organization.

[SOURCE: ISO 2789:2013, definition 2.1.10]

3.52
qualitative data
data describing, but not measuring the attributes or properties of an object, in particular the reasons for human actions

Note 1 to entry: The attributes can be categorized into classes that may be assigned numeric values.

3.53
quality
degree to which a set of inherent characteristics fulfils requirements

Note 1 to entry: The term "quality" can be used with adjectives such as poor, good or excellent.

Note 2 to entry: "Inherent", as opposed to "assigned", means existing in something, especially as a permanent characteristic.

[SOURCE: ISO 9000:2005, definition 3.1.1]

3.54
quantitative data
data in numerical form expressing a certain quantity, amount or range, amenable to statistical manipulation

Note 1 to entry: Quantitative data are usually expressed in measurement units, e.g. number of loans, percentage of interviewees visiting the library.

3.55
questionnaire
a set of questions for a survey or a structured or semi-structured interview

Note 1 to entry: The questions may be closed (answerable by checking one of several predetermined answers) or open (requiring participants to answer in their own words).

3.56
reference question
information contact that involves the knowledge or use of one or more information sources (such as printed and non-printed materials, machine-readable databases, the library's own and other institutions' catalogues) by library staff

Note 1 to entry: May also involve recommendations, interpretation, or instruction in the use of such sources.

Note 2 to entry: One reference question may address several issues.

Note 3 to entry: The question can be delivered personally or by means of telephone, regular mail, fax or electronic media (via email, the library website or other networked communications mechanisms).

Note 4 to entry: It is essential that libraries do not include informational (directional and administrative) questions, e.g. for locating staff or facilities, regarding opening times or about handling equipment such as printers or computer terminals.

[SOURCE: ISO 2789:2013, definition 2.2.26]

3.57
reference service
provision of information and assistance, in response to requests, by an information and documentation organization

[SOURCE: ISO 5127:2001, definition 5.5.06]

3.58
registered user
person or organization registered with a library in order to use its collection and/or services within or away from the library

Note 1 to entry: Users may be registered upon their request or automatically when enrolling in the institution.

Note 2 to entry: The registration should be monitored at regular intervals, minimum every 3 years, so that inactive users can be removed from the register.

[SOURCE: ISO 2789:2013, definition 2.2.28]

3.59
reliability
degree to which a measure repeatedly and consistently produces the same result

[SOURCE: ISO 11620:—, definition 3.44]

3.60
return on investment
ROI
relationship between the total economic benefit of the library and the total resources invested in the library

Note 1 to entry: Return on investment is usually calculated for the fiscal year, dividing the estimated economic benefit by the total expenditure on the library.

Note 2 to entry: ROI can be calculated for the whole library, or for a specific library service.

3.61
school library
library attached to all types of schools below the third (tertiary) level of education whose primary function is to serve the pupils and teachers of such a school

Note 1 to entry: A school library may also serve the general public.

Note 2 to entry: This includes libraries and resource collections in all educational institutions below the third level, which may be described as "Colleges", "Colleges of Further Education", "Vocational Institutes", etc.

[SOURCE: ISO 2789:2013, definition 2.1.11]

3.62
self-assessment
process of critically reviewing the quality of one's own skills, knowledge, or confidence

Note 1 to entry: The reviewing is normally done through a paper-based or online questionnaire where some or all of the questions require respondents to rate themselves on a scale.

3.63
self-recording
users' record of their behaviour and/or attitudes in information seeking and information use over a period of time, usually in the form of a diary

Note 1 to entry: The record can be used for identifying library impact.

Note 2 to entry: The diary can be structured, giving a guideline to what should be observed, or unstructured, leaving the choice of subjects to the writer.

3.64
social impact
influence of a library's existence and services on the population in the surrounding community or on society in general

3.65
social return on investment
SROI
method for measuring extra-financial value (i.e. environmental and social value not currently reflected in conventional financial accounts)

3.66
special library
independent library covering one discipline or particular field of knowledge or a special regional interest

Note 1 to entry: The term special library includes libraries primarily serving a specific category of users, or primarily devoted to a specific form of document, or libraries sponsored by an organization to serve its own work-related objectives.

[SOURCE: ISO 2789:2013, definition 2.1.12 modified; note 2 to entry has been deleted]

3.67
survey
method of data collection using written questionnaires for gathering information from the whole or a sample of a defined population

Note 1 to entry: The survey can be conducted face to face, via handouts, telephone, email, or Internet.

3.68
target population
groups of actual and potential users appropriate to an individual library as the object of a specific service or as the primary users of specific materials

[SOURCE: ISO 11620:—, definition 3.47]

3.69
target population with special needs
part of a library's population to be served with needs that require special library services

Note 1 to entry: The special needs can be caused by physical and health impairment, economic disadvantages (e.g. long-term unemployment), cultural differences (e.g. non-native speakers, new arrivals), educational background, or other needs that require special library services.

Note 2 to entry: Children, young people and seniors without additional needs are not included.

Note 3 to entry: A library may have more than one target population with special needs.

Note 4 to entry: An individual may belong to more than one such target population.

[SOURCE: ISO 2789:2013, definition 2.2.35]

3.70
user
recipient of library services

Note 1 to entry: The recipient may be a person or an institution, including libraries.

Note 2 to entry: Library services include electronic services, physical services and visiting the library premises.

[SOURCE: ISO 2789:2013, definition 2.2.36]

3.71
user place
place provided for users for reading or studying, whether with or without seating or equipment

Note 1 to entry: Includes places in carrels, in seminar and study rooms, and in the audiovisual and children's departments of the library, and informal seating in lounges, group areas, etc.

Note 2 to entry: Excludes places in halls, lecture and auditory theatres intended for audiences of special events. Also excludes floor space and cushions on which users may sit.

[SOURCE: ISO 2789:2013, definition 2.4.11]

3.72
user satisfaction survey
survey administered to a sample of a library's users to find out how they rate the quality of their library experiences, and any suggestions for improvement

Note 1 to entry: The survey may be conducted face to face, via handouts, telephone, email, or Internet.

Note 2 to entry: The survey can contain questions about user status, how often and how they normally use the resources and services the library provides.

Note 3 to entry: In a longitudinal study, the same or a similar survey instrument is administered more than once, after a suitable interval of time has elapsed, to measure changes in patterns of usage, perceptions, attitudes, etc.

3.73
user training
training programme set up with a specified lesson plan, which aims at specific learning outcomes for the use of library and other information services

Note 1 to entry: User training can be offered as a tour of the library, as library tuition, or as a web-based service for users.

Note 2 to entry: The duration of lessons is irrelevant.

[SOURCE: ISO 2789:2013, definition 2.2.37]

3.74
validity
extent to which the results of a research process represent what was intended

[SOURCE: ISO 20252:2006, definition 2.62]

3.75
value
importance that stakeholders (funding institutions, politicians, the public, users, staff) attach to libraries and which is related to the perception of actual or potential benefit

Note 1 to entry: Monetary value can be included.

3.76
virtual visit
one continuous cycle of user activities on the library website by users from outside the library's IP address space (usually from outside the library premises), regardless of the number of pages or elements viewed

Note 1 to entry: A virtual visit typically starts when a user accesses the library website after visiting an external page, and ends if no activity has been recorded for a defined period of time (recommended maximum is 30 min). Another access after a longer interval initiates a new visit.

Note 2 to entry: A virtual visitor should at least be identified by a unique cookie and/or by a unique combination of the user's IP address and browser string (user agent). Known web spiders and harvesters should be excluded.

Note 3 to entry: Adapted from ISO 2789:2013, definition 2.2.39.

3.77
visit
person (individual) entering the library premises

[SOURCE: ISO 2789:2013, definition 2.2.40]

4 Definition and description of library impact

4.1 General

Libraries are generally able to provide at least basic data about the input into their services (funding, staff, collections, space, equipment) and the output of those services (loans, visits, downloads, reference transactions, etc.). Such statistics are collected more or less regularly. The definitions and collecting procedures are described in ISO 2789 (International library statistics).

In addition to quantitative counts, libraries have also developed measures for assessing the quality of their services and the cost-efficiency of library performance. Such quality indicators or performance indicators are described in ISO 11620 (Library performance indicators).

In recent years, there has been a growing demand for non-profit organisations to show proof of their value for individuals, for their parent organisations and for society. For libraries, such value has traditionally been accepted as self-evident. However, users are becoming increasingly independent in their information seeking practices, and information seems to be free on the web, so that the benefits gained from library services are questioned not only by funding institutions but also by the public. Libraries have responded to this demand and have developed and tested methods for identifying and proving their benefits to users and society.

4.2 Definition of library impact

In the sense of this International Standard, impact is defined as the influence of libraries and their services on individuals and/or on society. "Outcome" in the sense of this International Standard is not synonymous with "impact", but is defined as effect of the output related to the library's planning. See the following terms and definitions which are concerned by this:

— **input:** contribution of resources in support of a library (e.g. funding, staff, collections, space, equipment) (3.28);

— **process:** set of interrelated or interacting activities which transforms inputs into outputs (e.g. cataloguing, lending, reference service) (3.50);

— **output:** products of library processes (e.g. titles catalogued, loans, downloads from the electronic collection, reference questions answered) (3.45);

— **outcome:** direct, pre-defined effect of the output related to goals and objectives of the library's planning (e.g. number of users, user satisfaction levels) (3.44);

— **impact:** difference or change in an individual or group resulting from the contact with library services (3.25);

— **value:** importance that stakeholders (funding institutions, politicians, the public, users, staff) attach to libraries and which is related to the perception of actual or potential benefit (3.75).

The input is converted into output by means of processes. The output can have direct, pre-defined effects (outcomes). Output and outcomes can lead to impact and finally to value.

4.3 Aspects of library impact

Generally the impact of a library's existence and of its services will be seen as positive and a benefit. There is also the possibility of negative impact: a bad experience during a library visit can result in a negative attitude to library use.

Aspects of library impact are:

— the impact can be *immediate* (finding useful information) or *long-term* (increase in information literacy);

— the impact can be *far-reaching* (changing people's lives) or *limited* (e.g. small changes in information seeking skills);

— the impact can be *intended* or *unintended*. Intended impact has been planned by the library according to its mission and goals. Unintended impact (e.g. visitors experiencing the possibility of social contacts in the library) can nevertheless further a positive attitude to library use;

— *actual* benefits for a user differ from the *potential* benefits, e.g. the preciousness of a library's existence for issues such as local culture or children's literacy. Potential benefits include the value of cultural heritage collections, which have been preserved by a library, for future generations.

Depending on their previous experience and competences library activities and services can have different impact on different groups or individuals.

4.4 Effects of library impact

4.4.1 General

Impact of libraries can be roughly divided into the following areas:

a) impact on individuals;

b) impact on the library's institution or community;

c) social impact.

In all three cases, the impact can concern changes in individuals, groups, institutions or society, but can also generate economic value.

4.4.2 Impact on individuals

Impact on individuals generally means the influence of library contacts and library services on individual persons, but it can also concern whole groups (e.g. a school class or the population of non-native speakers in a community).

This influence can have the following effects:

a) changes in skills and competences;

b) changes in attitudes and behaviour;

c) higher success in research, study, or career;

d) individual well-being.

4.4.2.1 Changes in skills and competences

Changes in users' skills and competences can concern basic skills such as finding a book in open stacks or searching in online catalogues or databases. Such skills could be furthered by a single library visit, e.g. by using an Internet-connected computer workstation in a public library or by attending a training lesson in online catalogue use. Even in a single library visit, users can discover the value of the library's help and training services and can become aware of the library's remote services that they can use from their working-place or private home.

Frequent use of library services can result in an increase of information literacy: the competence of formulating a search query, choosing adequate resources for the search, knowing ways for finding and procuring desired items, and above all being able to judge whether an information resource, e.g. a website, is relevant and reliable.

4.4.2.2 Changes in attitudes and behaviour

Contacts with libraries and their services can result in higher self-confidence and independence in information seeking and information use, and in increased motivation for learning.

Other examples for changes in behaviour and attitudes are:

— Being familiar with library collections can change users' reading practices and their choice of leisure reading.

— Influenced by the contact with library services users can learn to consult a wider range of information resources or to deal with subjects from an interdisciplinary point of view.

— As a result of library events tailored for specific groups, new user groups could be attracted to libraries.

— As a result of collaboration with the library's staff, faculty members might come to see library use as an integral part of their courses.

4.4.2.3 Higher success in research, study, and career

Library services can further the success of users in research, study and learning, or in their profession. In all these areas, the following effects are possible:

— time saved in information seeking;

— improvement of research skills and critical thinking;

— selection of relevant information for a question by targeted searching;

— up-to-dateness in a user's research topic;

— better career chances by improved information literacy.

Most examples for showing library impact on individual success have been found in the academic sector. Academic success can be shown by the following (Poll, Payne, 2006):

— shorter duration of studies;

— high grades in examinations;

— student retention;

— high employment rate after examinations;

— the quality of publications (high impact factor, publishing in peer-reviewed journals).

4.4.2.4 Impact on individual well-being

Both traditional and new web-based library services can add to the well-being of individual persons, e.g. by information about health, hobbies, family problems, or travels, but it is especially the physical library, the library as place that conduces to a sense of being and feeling well. The following aspects have been mentioned as important for users' well-being:

— the safety of the place;

— the quiet atmosphere for concentrated learning and research;

— the comfortable surroundings;

— the options for contacts and communication;

— the possibility of group activities, whether working together, sharing information and ideas, playing games or viewing films;

— the feeling of equality for all visitors, the sense of belonging.

4.4.3 Impact on the library's institution or community

By influencing individuals or groups, the scope of the library's impact can widen to include the library's institution or community (e.g. a university, a municipality, a district). These impacts can include the following:

— higher institutional prestige and rankings;

— greater and more positive visibility of the library to the institution or community;

— increased institutional funding, research grants, donors;

— attracting top researchers, academic staff, students;

— attracting other research entities, businesses, non-governmental organisations (NGOs), new population.

4.4.4 Social impact

Social impact of libraries in the sense of this International Standard is the influence of a library's existence and its services on the population in the surrounding community or on society in general. The main areas of such influence are:

a) Social life

   1) *Social inclusion*: Libraries help to include marginalised groups or persons with special needs and support them in developing a sense of equity and access.

   2) *Social cohesion*: Libraries strengthen the connections between people and groups and support intercultural and intergenerational understanding.

b) Participation in information and education

   1) *Free access to information*: By giving access to political, social, scientific, economic, government and cultural information, locally and worldwide, libraries guarantee that people can participate and make informed choices in political and social life.

   2) *Free Internet access:* This is an important benefit for those who cannot afford to pay for it.

   3) *Education and life-long learning:* Libraries play a key role for the participation of all people in education and life-long learning. A special issue of public libraries is children's literacy.

c) Local culture and identity

   Libraries promote local culture and history via exhibitions and other events, provide information about the local community and function as central meeting places in a community. Thus, they foster civic pride and community identity.

d) Cultural diversity

   In a culturally diverse society, libraries enable the different groups to maintain their cultural heritage and thus foster diversity.

e) Community development

Libraries provide a focal point for a wide range of community activities and programmes which support the development of the community or of society in general. Examples are environmental awareness, health awareness, transport safety, or personal well-being.

f) Individual well-being

The library's influence on the personal well-being of the surrounding population might appear less important to funding institutions or politicians. However, it can be highly relevant for a community that the library is experienced as a safe, quiet and comfortable place, not only for reading and studying, but also for meeting people or joining events. The sense of belonging somewhere can further integration and thus contribute to social peace.

g) Preservation of the cultural heritage

A special case of social impact concerns the potential value of the library for future generations by preserving the documentary cultural heritage.

While an impact on an individual might be produced by one-time library use, social impact will generally show only after a longer time period.

Social impact is often indirect, arising from the cumulative effect of individual impacts on members of the population. For example, library workshops for unemployed people not only have a direct impact on the individuals involved, who are helped to obtain employment, but, over time, have an indirect impact on the wider community, in helping to reduce the unemployment rate. Further, the existence of a library in a specified community has a contingency value for the population, as they know they could use the library at any time.

Social impact is not restricted to libraries serving the general public (generally national and public libraries). For example, academic libraries provide collections and services with a higher level of specialization than public libraries. These services are generally available for research purposes of external users and thus can influence the level of knowledge in the surrounding community.

4.4.5 Economic value

As the positive effects of libraries on the individual user and on society are in most cases intangible, libraries have also tried to show the monetary benefit of their services. Assessing the economic impact of libraries can have two different meanings:

a) In most studies, it means measuring the value of library services in terms of money, either by showing a return on investment (ROI) or a cost-benefit ratio.

b) In other cases, libraries have tried to show the direct positive influence on the economic life of the community, the region or even on the national economy.

Showing a monetary value of their services is especially helpful for libraries when competing for funding with other cultural or recreational institutions. Assessing the economic value of library services constitutes a part of cultural economics, where culture is recognized as economic factor.

4.5 Impact planning

Strategic planning of libraries starts from identifying and formulating the library's mission and the long-term goals and short-term objectives. The main questions are:

— What is the library meant to achieve?

— What population has it been set up to serve?

— What institution or community does the library primarily serve?

Such planning should include:

— decisions on what outcomes the library aims to achieve, namely the effects of the output as related to goals and objectives;

— a clear definition of the impact the library ought to have on its population and on society.

Most libraries are part of an institution – a community, a school, a commercial firm, or a university – and the library's mission and goals should be adjusted to those of its parent institution. The impact of library services should therefore support the institutional goals and the strategic aims of the institution.

Impact planning should consider:

— that impact is not always predictable;

— that it will often only become visible over time;

— that impact can be higher if a gain in skills and competences or a change in behaviour seems advantageous to the user (e.g. before an examination);

— that changes in individuals are more likely if they are based on previous skills and competences;

— that a positive experience of library contacts predisposes users for learning through library services.

4.6 Challenges in assessing impact

4.6.1 General

Trying to identify the impact of libraries on individuals, groups and society is a much more complex and demanding process than collecting input and output data or assessing the quality of the library's performance. The main difficulties for assessing impact can be summarized thus:

a) The impact is for the most part intangible and difficult to quantify.

b) The library's influence is generally not the only and possibly not the strongest one.

c) Impact of the same library service can vary in different user populations and in different cultural and economic surroundings.

d) Long-term effects cannot be ascertained if the users are not available for follow-up.

e) Qualitative data will necessarily be subjective rather than objective.

f) Library staff may not be familiar with the methods used for impact assessment or have the skills to use them.

g) The expenditure of time and effort can be considerable.

4.6.2 Methodological issues

4.6.2.1 Intangibility of the impact

Contacts with library services (e.g. a training lesson, a reference transaction) can have direct, tangible effects. A user can acquire a new skill, e.g. using truncation in a catalogue or database search. In most cases what this International Standard defines as impact does not refer to simple skills, but to more general changes in an individual, a group or community: increase in knowledge, changes in attitudes, values and/or behaviour. These changes are for the most part indirect and intangible and therefore difficult to identify and to quantify.

4.6.2.2 Diverse influence on users

The influences on individuals are complex. It will generally not be possible to separate library impact from other influences and to prove that changes are due to the use of library services. Users can obtain information and competences from friends or teachers, from using media outside the library or searching the Internet. As it is often not possible to find positive proof of the library having caused a specified change in people, surrogate measures have to be used that can at least identify a partial influence of the library.

4.6.2.3 Impact varies in different groups and surroundings

A contact with library services can have differing effects on different user groups. When attending library training on the use of databases, undergraduate students might learn how to access and use electronic information resources, while postgraduates will acquire knowledge about the subject-specific databases that are used in their particular disciplines. The learning effect depends largely on users realizing the library's usefulness for their needs and on training being delivered at the time of need.

Conceptions of what is useful for learning and studying, profession or private life and of what can be seen as benefit for a community or for society can vary considerably in different regions. This will influence the perception of library value and therewith the results of impact assessment and will affect the comparability of such results.

4.6.2.4 Long-term impact difficult to ascertain

A short-term impact, e.g. a new skill, can generally be observed fairly easily, but it usually takes some time before the impact of a library's activities becomes clear.

Long-term effects cannot be identified if the persons concerned are no longer available for tests or surveys. This is often the case, as a library's users can change quickly. Another problem will be that people often cannot remember and differentiate their experiences over time.

4.6.2.5 Subjectivity of qualitative data

The most-used methods in impact assessment are qualitative: surveys, interviews, focus groups, or anecdotal data collected from people's stories. The data collected by such methods will necessarily be subjective rather than objective, they show the "perceived value" to the respondents, their feelings and perceptions.

4.6.3 Assessment skills

Libraries have traditionally used quantitative methods (statistics, performance measures) with "hard" verifiable data. Results taken from interviews or relying on anecdotes might not be seen as reliable or conclusive enough to be presented to funding institutions or the public. In addition, libraries may lack the expertise for using qualitative methods.

Another objection against impact assessment is the workload that is involved in the measurement. While output data are often available from the library's automated system or servers, impact data have to be collected in complex processes. This problem can be reduced by limiting the impact assessment to critical issues, e.g. services that are most relevant for the library's main goals.

4.7 Implementation of impact assessment projects

Projects for assessing impact of library services and resources can be initiated by various stakeholders with differing interests:

a) the individual library (interested in management issues and in promoting its role);

b) groups of libraries (interested in benchmarking and in promoting the role of libraries);

c) the library's institution or community (interested in the library's contribution to their goals);

d) political or other administrative bodies that are responsible for library policy (interested in positive influence on political goals).

Most impact projects are performed by individual libraries or groups of libraries, though often instigated by the respective institutions or communities. Group projects may have a better chance of obtaining third-party financing, e.g. from foundations or political programmes.

A library impact project can also be conducted as part of a broader evaluation of the library's institution or community. In this case, the library cannot choose its own methods but acts in accordance with the broader plan. Such comprehensive assessment projects are usually conducted or assisted by outside experts.

4.8 Use of impact assessment results

4.8.1 General

The methods and techniques defined and described in this International Standard can be used for the evaluation of library impact as well as for promoting and advocating the value that libraries provide for their population and for society.

4.8.2 Objective of impact assessment

Objectives of impact assessment can be summarized as follows:

a) to support decision making and resource management in the individual library;

b) to justify the resources used for library services;

c) to monitor the findings against results of similar organizations;

d) to inform national or regional organizations in their support, funding and monitoring roles;

e) to promote the library's role and importance for their users and for society.

4.8.3 Reporting and presenting assessment results

The results should be reported in a way that informs the decision-making processes and demonstrates how the library fulfils its mission. To gain the full value of the results, adequate methods of representing the data will be essential, aligned with the interests of the different stakeholder groups (see B.3).

It will be useful to illustrate the findings with narrative texts about what has changed due to library impact, e.g. stories about an increase of reading in a specified population, or about the gain in personal well-being due to a library's health information resources and services. Such anecdotal evidence complements the data and makes a more persuasive case for impact assessment results.

4.8.4 Comparability of assessment results

One purpose of assessing a library's impact is self-diagnosis. If the findings of impact assessments are compared with the library's goals, they can show whether the library achieved its impact planning goals and can support decision-making and resource allocation. Repeated assessments, using the same methodology, allow comparison over time within the same library.

Comparisons across different libraries are much more complicated and should be made in full recognition of the limitations of such comparisons, taking into account the differences in the libraries' tasks, populations, and governance structures. Comparisons between libraries require a good understanding of the methods used and careful interpretation of the findings.

5 Methods for assessing library impact

5.1 General

In the majority of cases the impact of libraries cannot be captured directly, but surrogate measures or indicators have to be used. Evidence of impact can be collected in the following ways (Streatfield, 2002):

— inferred through
  — output data (e.g. attendance at events; levels of service use; results of examinations);
  — library performance indicators;
  — user satisfaction levels;
— solicited (through questionnaires, interviews, focus groups, or other methods for requesting information or opinion);
— observed (through structured observation; informal observation; self-recording; tests).

In many cases, it has proved useful to combine several methods to obtain reliable results, e.g. to back up statistics that indicate changing user behaviour with results from interviews or focus groups.

5.2 Inferred evidence

(See Clause 6 for details.)

The challenge of impact measurement in libraries is to identify data that describe and indicate what difference library resources, services, and expertise make in users' lives. Libraries collect a huge amount of data about their input and output, and many of them also use performance measures and user satisfaction surveys for assessing the actual and the perceived quality of their services.

Generally those data cannot be directly used to show an impact of library use. However, if input and output data are collected systematically and if the library's performance and the satisfaction of its users are checked regularly, the results will allow the identification of activities and services that apparently have had an impact on the users. Such cases of inferred impact should be followed up by methods in Clauses 7 to 9 of this International Standard in order to validate the inference.

5.3 Solicited evidence

(See Clause 7 for details.)

5.3.1 General

"Soliciting" evidence of impact means asking for the users' experience with libraries, the benefits they derived from library services and their general opinion of libraries. The questions are usually addressed to actual users, but may include non-users.

5.3.2 Methods

The methods can be differentiated into written or oral questioning (surveys, interviews, focus groups). Oral questioning is usually less standardized and will yield more subjective opinions and attitudes. Written surveys are more or less standardized and predominantly deliver results that are quantifiable. If a large target population has to be questioned, structured and standardized questionnaires should be preferred in order to cope with the quantity of results and to ensure comparability of the answers.

Users can also be asked for a self-assessment of the skills and competences they have gained by using library services.

The questions can use a critical incident technique (CIT), or address the general, long-term experience of users. CIT can concern a single visit, or a specific activity that lasts longer than one visit, e.g. the experience when writing a paper. If users are questioned as to one specified day or visit, the answers may be influenced by the potentially untypical experiences of that day or visit.

Whichever method is used, the respondents should be notified of the purpose and goals of the research.

5.4 Observed evidence

(See Clause 8 for details.)

5.4.1 General

Observation in the sense of this International Standard is a method of data collection in which the situation of interest is watched and the relevant facts, actions and behaviours are recorded. There may be rating scales that the researcher would use when observing the behaviour.

Observation requires that the researcher observes actions and behaviours directly instead of using research instruments such as surveys or questionnaires.

There may be ethical and privacy issues to be addressed when observing and recording behaviour. Subjects should not be identified in the records of observation without their permission.

Observers should be carefully trained and should be given guidelines that specify who and what should be observed and protocols for noting and/or coding the observed evidence.

5.4.2 Methods

Observation can be differentiated as to being:

a) structured or non-structured;

b) participant or non-participant;

c) open or covert.

Structured observation: In structured observation, the observer is provided with a schedule that shows what to look for in the investigated subjects' behaviour and how to record and code the observations. The observation schedule ensures that observation and recording are done systematically. In unstructured observation, only a general frame for the study is given.

Participant observation: In participant observation, the researcher takes part in the activities of the group or community that is being studied in order to observe the behaviour. Non-participant observation means that the observer is not part of the observed area. In non-participant observation the task can also be carried out by other means such as use of a video recorder.

Open observation implies that the observed subjects are aware that their behaviour is being observed. The problem is that their behaviour might be influenced by this knowledge. In order to ensure valid results, it might be necessary in special cases to use covert observation, where the observer is not identified. In such circumstances, obtaining the informed consent of the subject after the observation, and ensuring confidentiality of the data gathered, is of particular importance.

5.5 Combined methods

Clauses 5 to 8 cover different methods for collecting and analysing data that may indicate or even demonstrate library impact. While these methods may be used independently, the use of several methods in combination, collecting and analysing data of different types and origin, can provide a richer more nuanced set of findings that may lead to better insights, understanding and identification of library impact and also to greater confidence in the conclusions generated by the evaluation study.

In library practice, combined methods may also be applied in an iterative process where the results of one study are followed up by another to gain better understanding of issues and impact.

User surveys are a prime example. Survey results provide both quantitative and qualitative data which may be followed up with interviews or focus groups to assess impact. Preparation for a new user survey may also include interviews or focus groups to identify specific user concerns that can be used in developing questions.

5.6 Quantitative and qualitative data

5.6.1 General

The findings of the different methods can be differentiated into quantitative and qualitative data, but most methods produce both types of data.

5.6.2 Quantitative data

5.6.2.1 General

Quantitative data are numeric and are usually expressed in measurement units, e.g. number of loans, percentage of interviewees visiting the library.

Much of the information that libraries have traditionally collected and reported – usage counts, purchases, collection size, staff size, budgets – is quantitative. Institutional and community data will also often be quantitative, e.g. socio-economic data, data of student and research performance.

Quantitative data can be collected via all methods mentioned in 5.2 to 5.4. Methods for soliciting user input such as interviews and surveys also provide data that can be analysed quantitatively.

5.6.2.2 Data from different sources

Quantitative data from different sources can be set in relation to each other, and to qualitative data, for better insight into the possible impact of the library. Depending on the reliability and validity of the data, a range of statistical analyses can be performed to identify key relationships, correlation and significance. One of the most effective approaches is to compare library use data with appropriate individual and institutional data to ascertain whether there is a statistical relationship between library use and performance. Even though there may be a statistically significant relationship, this does not necessarily mean that there is a causal relationship. Other factors or variables, including those outside the library, may play a substantial role as well. The services of a skilled data analyst may be needed to clarify the nature of these relationships.

5.6.2.3 Data mining

Data mining is a computational process that identifies potentially significant patterns by categorising and analysing quantitative data from different perspectives and dimensions, and summarizing potential relationships and impacts. Data sets can be analysed using statistical analysis software to determine relationships and significance. Data mining can also show longer term trends.

Most library statistical data deal with use of services, facilities and collections. Data mining can look at relationships between different sets of library data such as user training lessons and the quality of catalogue searches. Data that exist outside the library can be equally or more important in demonstrating impact. Data mining can be used to determine possible relationships between a library activity and performance in coursework or research, when quantitative data from the library are compared with other data from inside or outside the library.

5.6.3 Qualitative data

In the sense of this International Standard, qualitative data are data that describe, but do not measure the attributes or properties of an object, in particular the reasons for human actions.

Qualitative methods focus on understanding the reasons for human actions. The approaches include interview and survey techniques, storytelling, and self-assessment. The qualitative approach is appropriate for gathering evidence of library impact on individuals and communities and can complement quantitative information by bringing in direct input from those using library services, including their narratives.

Analysis of qualitative information differs from that of quantitative data and care is needed to use rigorous analytical methods that do not reflect the biases of the library. Qualitative analysis software can help identify relationships. The findings should be categorized into classes that may be assigned numeric values.

6 Inferred evidence

6.1 General

This clause shows how data that libraries collect regularly for their annual statistics or that they assess via performance measurement and user satisfaction surveys can be used for identifying potential impact.

6.2 Statistics

6.2.1 General

Library statistics are quantitative data describing library services, library use and library users. They measure the *input* into libraries (the resources including funding, buildings and equipment, staff and collections), the *output* (the usage of library collections and services) and the number and types of users.

The collection of such data has a long tradition. They are collected in the individual library and compiled and coordinated on a regional, national and finally international scale, usually separately as to types of libraries (e.g. public and academic libraries). To make the results comparable between regions or countries, the same definitions and methods of data collection must be used. Definitions and collecting methods are described in ISO 2789 (International library statistics).

6.2.2 Statistics indicating impact

6.2.2.1 General

Library statistics deal with quantities of input and output. They do not describe the quality of the library's performance or the effect of the library's services on the users, but in certain cases these statistics can be used for identifying developments that point to library impact in the sense of this International Standard.

6.2.2.2 Statistics of library use

Changes in users' concepts, practices and skills can become visible by looking at time series of usage statistics.

EXAMPLE Examples of such statistics are:

— number of physical or virtual library visits;

— number of downloads from the library's electronic collection;

— number of attendances at events.

If the numbers are increasing, the data seem to indicate that the users have adopted new ideas and practices, e.g. working inside the library, using the electronic collection, frequenting the reference service or visiting the library's account on a social network, because they found these services useful, instructive and helpful for their own purposes. It should be kept in mind that the level of library use is not yet an impact, and the assumption should be corroborated by methods like surveys or tests.

6.2.2.3 Statistics of library users

Changes in the number of active users, but especially in the type and grouping of users can also point to effects caused by library use.

Library users (and non-users) can be differentiated in various ways, e.g. as to age, gender, profession, ethnic origin. In institutions of higher education the differentiation can also follow the system of study courses. Further subdivision can concern population groups with special needs such as persons with physical and health impairment, unemployed persons, or non-native speakers. If the library adapts its services actively to such target populations, the rising number of active users out of the population may indicate changes in the perception and valuation of libraries.

EXAMPLE Examples of such statistics are:

— number of active users out of a specific target group;

— number of newly registered users of the age 13 to 18 (young adults);

— number of persons using a reference service in a specific language.

If the percentage of active library users in a specified target group is increasing, this indicates that the library's engagement for specified potential user groups has been successful in attracting those groups and changing their behaviour. Users might have experienced benefits when using the library and come again or recommend library use to other persons out of their group.

Again, the assumption should be corroborated by methods such as surveys or tests.

6.3 Library performance indicators

6.3.1 General

Performance indicators as described in ISO 11620 are numerical, symbolic or verbal expressions derived from library statistics and other data and used to characterize the performance of a library. They serve for evaluating the quality, effectiveness and cost-efficiency of the services and other activities of the library against the mission, goals and objectives of the library itself.

The main goal of performance measurement is to obtain detailed knowledge about strong or weak points in the services and thereby to support the management process. In addition, the results of performance indicators can be used for reporting to authorities, the user community or the public.

6.3.2 Indicators indicating impact

6.3.2.1 General

Performance indicators evaluate the quality of library services and products, not the effect of these services and products on users and on society, but the results of performance indicators, and especially time series of results can show that there has been an impact in the sense of this International Standard.

6.3.2.2 Indicators of library use

Impact is most frequently "indicated" by performance indicators concerning library use. If the amount of usage per member of the population is increasing (e.g. a higher number of loans or library visits per

capita), this points to a change in the attitude and behaviour of the population. Such changes could be due to:

— higher quality in library services;

— new library services and/or facilities;

— effective promotion activities.

EXAMPLE 1 Examples of indicators are:

— number of loans per capita;

— number of downloads per capita;

— number of library visits per capita;

— number of attendances at library events or training lessons per capita.

One indicator alone would often not be sufficient for assuming an impact, but if for example loans are decreasing and accesses to the electronic collection are increasing at the same time, this indicates that more users have become familiar with using electronic documents, possibly by the library's influence.

A more distinct indication of impact is given when the attendances of user training lessons increase. It indicates that users profited from the lessons.

EXAMPLE 2 Another example of an indicator is:

— number of user attendances at training lessons per capita

Frequent use of library services is not an impact; the assumption should be corroborated by methods such as surveys or tests.

There are also influences outside the library that affect the type and amount of usage.

6.3.2.3 Indicators of service quality

Many performance indicators assess the quality of the library's services and products. Criteria for service quality are for instance:

— speed, currency and accuracy;

— accessibility and reliability;

— competence and helpfulness of staff;

— adequacy of the library's services and products to the needs of its population.

If much-used library services such as reference and lending or the conditions and facilities in the physical library show such qualities, this will probably influence user behaviour. High quality shown by the following indicators allows assuming a positive influence, if connected to indicators of use:

EXAMPLE Examples of indicators: (It is assumed that all indicator results have increased since the last calculation.)

— *user places per capita – user places occupancy rate* (The library provides an adequate number of places for its population, and the occupancy of the places confirms that users are working in the library.);

— *hours open compared to demand - library visits per capita* (The opening hours consider user needs, and the users have got accustomed to come to the library.);

— *percentage of required titles in the electronic collection – number of downloads from the electronic collection*. (A great part of electronic titles that users request can be found in the collection, and users become familiar with electronic resources.)

Changes in the results of these indicators help to analyse the results of impact assessment by identifying causes for lower or higher impact over time.

6.3.2.4 Indicators comparing library statistics to cultural statistics

Not only data about libraries and their use, but general cultural statistics in countries may be used for identifying a positive influence of libraries. Various performance indicators can be calculated by setting library statistics in relation to socio-demographic data collected by the UNESCO Institute for Statistics and other organizations, e.g. data about the state of literacy and education or the distribution of Internet access in a country. Such performance indicators help to identify and promote the libraries' impact on literacy and information literacy, education and culture in a country.

EXAMPLE 1 Examples of such performance indicators are:

— average number of public libraries per 1 000 inhabitants;

— number of registered library users per 1 000 inhabitants.

Setting the data in relation not to the whole population, but to those inhabitants that are literate, helps to identify correlations between library use and literacy.

EXAMPLE 2 Examples of such correlations are:

— number of libraries per 1 000 literate inhabitants;

— average number of loans per 1 000 literate inhabitants.

The assumption is that a high number of public libraries with their collections and services and a high amount of library use may have influenced the percentage of literate inhabitants in a country. This could only be verified by surveys asking a sample of literate inhabitants for their estimate of benefits received by libraries.

In the same way, data about libraries and library use can be set in comparison to data such as:

— enrolment rates in primary education;

— attendance rates in primary education;

— school dropout rates.

6.4 Data from user satisfaction surveys

6.4.1 General

User satisfaction surveys in the sense of this International Standard are surveys administered to library users to find out how they rate their library experiences, and any suggestions for improvement.

The results of user satisfaction surveys will be most useful if the identical survey is applied in more or less regular time intervals over a period of years. Data can then be reviewed against former results, timelines can be established and comparison between the different periods shows changes very clearly.

6.4.2 Types of user satisfaction surveys

There are various and competing measurement approaches for user satisfaction. The most-used method is the direct measurement method, where users rate the services and their attributes by their satisfaction and by the importance of the services to them on different scales.

Another well-known approach in the library sector is the expectancy – disconfirmation paradigm in different variants. Users compare the actual product and service performance with their prior expectations. In cases where user expectations are met or even exceeded, the user is satisfied. This approach is also called gap analysis.

6.4.3 User satisfaction indicating impact

User satisfaction surveys ask for a user's one-time or long-term experience with library services or for experience compared to expectation. Though satisfaction in itself is not a direct impact in the sense of this International Standard, it can predispose users for being influenced and can serve as basis for impact in furthering receptivity. High satisfaction with specified services can identify library services that may have had an impact on the user's skills, competences, behaviour or opinions.

EXAMPLE

— High satisfaction with the **reference service** can indicate that users got valuable information and/or learnt something.

— High satisfaction with **user training** can indicate that the attendees acquired new skills.

— High satisfaction with the **collections** devised for target groups with special needs can indicate that the users changed their attitude towards reading and using information sources.

— High satisfaction with the **speed or accuracy** of service delivery can indicate that users have been benefited by saving time and effort in their work.

Such assumptions should be validated by using methods as described in Clauses 7 to 9.

7 Solicited evidence

7.1 General

The methods grouped under "solicited evidence" employ various techniques of questioning users and non-users about their experience and estimation of library benefits. The methods comprise written questioning (surveys), oral questioning (interviews, focus groups), and self-assessment of users.

All methods mentioned above produce qualitative and quantitative data, but also stories and anecdotes about library impact.

7.2 Impact surveys

7.2.1 General

Surveys are the most-used instrument for determining the extent to which direct or long-term library impact is experienced by the users. Libraries have been familiar with user surveys for decades, mostly enquiring about satisfaction with library services, but also about the types of activities when users physically or virtually visit a library, or about desired new or changed library services.

Impact surveys might ask some of the questions mentioned above, but they add a new dimension: they ask about the effects – especially beneficial effects – of library contact. The impact survey can ask for:

— influences that users experienced individually;

— influences that they think libraries normally have.

Generally, an impact survey will address actual library users in order to capture their opinion and experience, but if the main point of a survey is to assess the general opinion about a library's value, e.g. the value of a public library for a district in a community, then non-users should be included. Persons who themselves do not use libraries may yet have a clear conception of a library's value for individuals and society. Questioning a sample of all potential users will also help to identify reasons for non-use (long distances, inconvenient opening hours, etc.).

Information collected through impact surveys can include participants' self-assessment of their skills, knowledge, attitudes, and behaviour, although this information will not necessarily demonstrate impact on its own.

7.2.2 Structure and format of surveys

7.2.2.1 General

Before starting an impact survey, the scope and goals of the project and the target group to be approached should be defined. Then the format and contents of the survey can be determined accordingly.

The survey should be pre-tested in a sample of the population for which it is meant. It must be considered that certain user groups have particular sensitivities that might affect the responses and the response rate. In a written questionnaire, enough space should be provided for answers to be recorded and subsequently coded for analysis.

General rules for all types of user surveys are that the questionnaire should be:

a) short, ideally completed in 10 min to 20 min;

b) clearly structured for quick overview, with questions proceeding from general to specific issues;

c) easy to use, with short questions and well-defined answer categories;

d) written in appropriate language for the target group of the survey;

e) strictly anonymous, so participants' answers are more open and honest;

f) in an attractive format that conveys a professional image.

7.2.2.2 Format and presentation

The questionnaires can be administered in different formats and ways:

a) print questionnaires handed out in or outside the library;

b) print questionnaires sent by mail to all or a sample of registered or potential users;

c) telephone surveys of a sample of registered or potential users (feasible for short questionnaires);

d) online questionnaires sent by electronic mail to all or a sample of registered (or potential) users;

e) online surveys presented on the library's website, often in connection with the use of specified services (online catalogue, electronic journals).

The various formats and methods of distribution all have advantages and disadvantages. Which format and method are selected for any particular survey will depend on a number of factors, such as the target population, and the resources available to conduct and analyse the survey. The design and structure of a survey have direct implications for the analysis.

Method a), when conducted inside the library, can be structured to give a systematic random sample, statistically equivalent to a simple random sample. Method a) when conducted outside the library, and method e), are convenience samples, and particular care is required in the interpretation of the results. Methods b), c), and d) each require a sampling frame (i.e. comprehensive list) of registered users (or the wider population, if potential users are to be included) from which a random sample can be selected in a variety of ways to suit the circumstances. Libraries are advised to consult a statistician, or a standard text on the theory and practice of sampling, when designing a survey.

In libraries where most users can be expected to have an email account and/or Internet access, online surveys are considered to be the most appropriate method for capturing a sample of users. This method is much cheaper and less time-consuming than working with print questionnaires where all answers have to be entered into a statistical program. Especially in public libraries however, the respondents to an online survey might not be representative of the total target population.

7.2.2.3 Response rates

Response rates are highest when the interviewees are personally addressed, i.e.. when questionnaires are distributed in person with an explanation of the survey goals and the possibility of interviewees asking questions while completing the survey. The same applies to telephone surveys. In addition, both methods yield much anecdotal information which may also be used for qualitative analysis. The disadvantage of both methods is that the respondents might be influenced by the staff or by the telephone interviewer; these methods also require greater resources in terms of staff time.

Incentives can enhance response rates but must not be too large because people might try to participate more than once.

7.2.2.4 Samples

Sample sizes should be large enough to ensure a return of at least 100 responses and should be strongly orientated towards the socio-demographic structure of the total population to reach representative results. A minimum of 400 responses is recommended for large populations.

Sample sizes can also be calculated with the help of sample size calculators (e.g. National Statistical Service, Australia).

7.2.3 One time experience – Long-term experience

The questionnaire can ask about experience during one particular visit to the library or its online services ("your last visit" – critical incident technique) or for the user's general experience.

Asking only about one visit has the advantage that users remember more or less correctly what happened. The disadvantage is that the visit may have included very little of what the person usually does in the library, and that learning effects may come later.

EXAMPLE 1 Examples of questions (one-time experience or critical incident):

— What did you do during your library visit?

— Did you learn something in this visit?

— Have you enjoyed the visit?

Asking for the general experience has the advantage of covering a longer time period with more activities and effects. The disadvantage is that respondents will mark many options in the questionnaire as appropriate. A solution can be to ask users to additionally mark their three favourite library activities and the three most important incidences of impact.

EXAMPLE 2 Examples of open-ended questions (general experience):

— What do you do when you visit the library?

— Has the library helped you to do better in your studies (school, job)?

— Have you developed new skills, e.g. in information seeking?

7.2.4 Types of questions

7.2.4.1 Functional questions

7.2.4.1.1 Questions in the survey can have different functions.

7.2.4.1.2 *Filter questions* are used for restricting the respondents to those parts of the questionnaire that are relevant for them.

EXAMPLE

Question 1 Did you work in the reading-room today?

☐ Yes (Go to question 2)

☐ No (Go to question 3)

Question 2 How long did you stay in the reading-room?

☐ < 2 h

☐ 2 to 5 h

☐ > 5 h

Question 3 Did you work in the learning centre today?

☐ Yes

☐ No

7.2.4.1.3 *Control questions* test the plausibility of the answers to another question. They ask for the same or related content, but are worded in another way and placed in different parts of the survey.

EXAMPLE

I always learn something new when I visit the library

strongly agree/agree/disagree/strongly disagree

(Control question, placed later in the survey)

I do not think of using the library when I want information

strongly agree/agree/disagree/strongly disagree

7.2.4.1.4 *Funnel questions* are used for approaching a topic from general to specific issues, asking more details at each level.

EXAMPLE 1

How satisfied are you with the library website overall?

How satisfied are you with the online catalogue?

How satisfied are you with the access to eBooks?

EXAMPLE 2 (funnel questions, at the same time filter questions):

At your last library visit, did you contact the reference desk? Yes/No

If Yes: Did you get any help? Yes/No

If Yes: Did you learn anything new? Yes/No

If Yes: What did you learn?

7.2.4.2 Open and closed questions

7.2.4.2.1 General

A key aspect in the questionnaire design is how to pose the questions to the respondent. There are two basic types of survey questions: open and closed. A third type is a mixture of both, generally combining closed questions with the option of free answers (e.g. under “other”).

Typically, closed questions are easier to complete, as well as easier to analyse than open ones. A mix of open and closed questions takes advantage of both types.

7.2.4.2.2 Open questions

Open questions allow participants to freely communicate impressions and opinions, responding in any way they choose.

The advantage of open questions is that spontaneous answers can produce ideas that are different from predefined answers and cover a broader field. The disadvantage is that users may not be comfortable with writing down opinions, or the survey may appear too time-consuming to complete.

Another disadvantage is that it will usually be time-consuming, and may be difficult to code and analyse the answers. In coding, it will be useful to read a certain number of responses, identify themes and assign codes to each theme. After that, codes can be assigned to all records in the survey database. Speciality software is available for the analysis of open questions.

Because of the workload, extensive use of open questions is best applied only for small target groups.

EXAMPLE Example of an open question:

Please describe your most successful library visit.

7.2.4.2.3 Closed questions

Closed questions include only a limited array of responses which have been predetermined by the authors of the survey. They may offer simple alternatives such as ‘Yes’ or ‘No’, but usually require that the respondents choose the most applicable answer among several options (multiple choice), that they mark all the options that apply, or that they use a frequency scale, an importance scale, or an agreement scale. It is essential that closed questions are exhaustive (i.e. that they cover the entire range of possible responses).

EXAMPLE Examples of closed questions:

How often do you access the library’s online catalogue?

(Please, mark one answer only)

— daily

— weekly

— less often

— never

After your reference interview today, how confident are you now of finding materials for your themes in the online catalogue?

(Not at all confident 1 2 3 4 5 6 7 Extremely confident)

Which of these things did you do in your visit today?

(Please, mark all that apply)

— borrowed/returned a book

— used the computers

— read a newspaper or magazine

— asked a member of staff for information

— used the catalogue

— something else

Closed questions need more effort when drafting a survey, but counting and analysis of the results are much easier than for open questions, as the answers are non-ambiguous, comparable and easy to score. Disadvantages can be:

— that not all possible answers have been identified;

— that too many options, e.g. more than 8 options, confuse the respondents;

— that the respondents may be biased by the predefined answers.

If the respondents are not familiar with the subject of a question, they might be instigated to mark an answer at random because they think they have to choose one. In order to avoid this, alternative answers should be offered such as "don't know", "undecided", "not applicable" or "no answer".

EXAMPLE In the past two years, has your use of the library's services increased?

— yes

— no

— I don't know

7.2.4.2.4 "Mixed" questions

These questions try to combine the advantages of open and closed questions. They offer predefined answers but add a category that gives the possibility of individual responses. Usually, the wording is: "Other (please define/please explain)".

EXAMPLE Why do you not study in the library? (Check more than one box, if applicable)

☐ long distance

☐ no convenient transportation

☐ opening hours not convenient

☐ not enough seats

☐ too noisy

☐ other (please explain)

7.2.4.3 Scaling

7.2.4.3.1 General

There are four basic types of data scaling: nominal, ordinal, interval and ratio scales. Nominal and ordinal scale questions are the types most frequently used in library surveys.

7.2.4.3.2 Nominal scale questions

Questions which produce nominal, or categorical, data are those which ask respondents to select from a list of unordered categories. Simple examples include questions concerning gender, or those requiring a yes/no response.

EXAMPLE Examples of nominal data:

Have you already used the new digital library service?

yes/no/don't know exactly

Which type of reference service do you prefer?

Have you already used the new digital library service?

— face-to-face

— via email

— via chat-box

— other

— not applicable

7.2.4.3.3 Ordinal scale questions

Questions which produce ordinal data are generally those where the possible responses have an obvious order. Examples include rating scales, and frequency of use of services. Questions asking respondents to rank the importance of various services also produce ordinal data.

EXAMPLE 1

What is your current age? (select one)

Less than 18, 18 to 29, 30 to 39, 40 to 49, 50 or older

EXAMPLE 2 Example of ranked data

Please rank the importance of the following library services for your activities. (Please fill in your rank order in the spaces provided using the numbers 1 through 5, where 1 means most important to you and 5 means the least important).

☐ Reference

☐ Bibliographic searching

☐ Interlibrary lending

☐ Online catalogue

☐ Loan, borrow and reserve

Response scales can have either an odd (3, 5, 7, etc.) or an even (4, 6, etc.) number of options. The odd-numbered scales have a middle value that is often chosen by respondents that are undecided or neutral. Response scales with an even number of responses and no middle neutral or undecided choice force the respondents to decide whether they lean more towards the agree or disagree end of the scale for each item.

EXAMPLE 3 Example of a response scale with an odd number of options:

How important do you deem online services for students' success? (select one):

Not very important 1 2 3 4 5 Extremely important

EXAMPLE 4 Example of a response scale with an even number of options:

Is the shortening of opening hours justifiable outside term?

Strongly disagree/disagree/slightly disagree/slightly agree/agree/strongly agree

7.2.4.3.4 Interval/ratio scale questions

Questions which produce interval data are those where the categories are ordered, and equally spaced. Such questions are rarely used in library surveys. Rating questions are not considered to produce interval scale data as it cannot be assumed that the difference between the categories is equal.

Questions which produce ratio data are those where the responses are numeric on a fixed scale with a defined zero point. Examples include age in years, distance travelled to the library in km, time spent in the reading room in hours.

Both types of question can be analysed using the same methods.

7.2.5 Survey content

7.2.5.1 Demographic data

The main goal of an impact survey is to collect data about the library's impact as perceived by its users. To achieve this purpose, it is generally necessary to include questions about the users' background and the use they make of library services because these aspects are essential for correctly interpreting the responses about perceived impact.

Academic and public libraries serve different populations. For academic libraries, students at all levels from undergraduate to senior, academic staff and researchers are the main target groups. Students expect to find help in learning, gaining skills, and successfully completing their study courses, while academic staff expects help in teaching and research. Public library programmes and services serve a wide variety of target groups of all ages and of different professional or ethnic backgrounds, whose needs and expectations vary extremely.

In all cases, it will be useful to get at least basic demographic information about the user (age group, gender), and, if possible, additional more specific data such as the user status (i.e. undergraduate, postgraduate, academic staff) and the subject of study or research in the context of academic libraries, or the user's ethnic group, language, educational level or occupation in the context of public libraries. Surveys soliciting personal information from individuals require ethical approval at most institutions and including demographic information in the survey will need the approval of the institution or funding authority.

7.2.5.2 Questions about library use

Library services are used differently by different users. Users might also use a service for more than one purpose. For rating a respondent's answers about the impact he or she experienced, it is necessary to connect the answers with data about that person's intention and practices in using library services, e.g.:

— frequency of library visits and/or online services use;

— reasons for not using a specified library or service;

— spectrum of activities when visiting the library or its online services;

— the most frequent activities.

The questionnaire could also ask whether respondents have increased their use of library services during a specified time period, e.g. the last year.

Another question could be whether the user is accustomed to go to other institutions and information sources (other libraries, the media, the Internet, etc.) for some of the activities/services mentioned in

the list. The results of such a question can be used for comparison with questions about the possible substitution of a library service (see 7.2.5.5).

Non-users could be asked which other options they prefer to libraries for purposes such as information seeking, learning and studying, reading newspapers and magazines, or attending training related to literacy and information literacy.

7.2.5.3 Impact questions for academic libraries

The mission of academic libraries is to support learning, teaching and research by providing access to relevant information, adequate facilities for research and study and help and guidance functions for information seeking. The library should also further the goals of its institution which will generally be to improve:

a) recruitment and retention of students;

b) graduation rates;

c) students' learning achievement;

d) teaching quality of the faculty;

e) faculty research productivity and reputation.

The questions in an impact survey should consider these issues. Questions should address the gain of information and knowledge, the acquisition of new skills, and the library's assistance in study and research and in issues of the respondent's profession. It is especially important to ask about time saved by using library services, as this will further and hasten success.

Other questions can address the issue of the library as place for study and research, and also as place for contacts and communication.

EXAMPLE 1 Examples of questions for students:

— Has the library helped you do better in examinations (e.g. by its collections, by the reference service, by training lessons)?

— Have the specialized courses (i.e. first year-seminars, writing-intensive courses) offered by the library helped you in your studies?

EXAMPLE 2 Examples of questions for academic staff:

— Do the library's electronic and print collections help you when you are preparing publications, presentations, or patent applications?

— Has the library helped you to save time in your research?

EXAMPLE 3 Examples of questions for academic staff regarding impact on their students:

— Did the library help your students in their studies?

— Do students who are frequent library users perform better in their examinations?

7.2.5.4 Impact questions for public libraries

The influence of public libraries, beside the impact on individuals (skills, learning, attitudes, well-being), concerns above all the social impact, namely the effect on social inclusion, free access to information, professional success, health issues, or local identity.

The questions will be partly the same as for academic libraries, but focus less on study and research than on recreation, school and learning, health information, job seeking and information for business and commerce. As in academic libraries, it is important to ask about the time saved by using library services, as this will further and quicken success.

Other questions can address the issue of the library as a place for learning and reading, and for contacts and communication.

EXAMPLE Examples of questions:

— Have you received helpful information for school/learning?

— Have you received helpful information for health and well-being?

— Has the library helped you to do better in your job?

— Has the library helped you to save time?

— Have you enjoyed the visit?

— Have you experienced the library as safe and quiet place for learning and reading?

If the impact survey does not aim at the whole population to be served, but at a specific group, the questions should be related to the needs and interests of that group.

7.2.5.5 Questions about the possible substitution of a library

The findings of the impact questions as described above can be validated by asking for the respondent's opinion as to a substitute for the library (or for specified services of the library).

EXAMPLE If this library did not exist, could you have got the same information and help elsewhere?

(Check more than one box, if applicable)

☐ From another library?

☐ By purchasing relevant material?

☐ Via the Internet?

☐ From teaching staff, colleagues, friends?

☐ In the media (newspapers, radio, television)?

☐ Perhaps, but it would have taken more time and effort.

☐ No, I do not think I would have got the same information.

Such questions should not give the impression that the library is going to be closed.

The aim of such questions is to show the importance and perhaps irreplaceability of a specified library for an individual user.

7.3 Interviews and focus groups

7.3.1 General

Oral questioning is done in the form of interviews where information is transferred from the interviewee to an interviewer. Interviews may be conducted individually or with groups, and face-to-face, by telephone, or via the Internet. An interview is normally handled by an interviewer or moderator (for a group interview).

This interactive method can address a subject in detail and, in contrast to written questionnaires or self-assessment, provides immediate response to questions. On the other hand interviews are generally more time-consuming and therefore expensive than surveys, especially in unstructured interviews where it may be difficult to code the answers. Instead of conducting multiple individual interviews, group interviews can save time.

Interviews with persons who are willing to be approached more than once over a specified time period are called panel interviews. They can be especially useful for identifying library impact that only becomes visible over time.

Basic ethical considerations such as informed consent and the right of interviewees to withdraw should be ensured as well as the confidentiality of information about participants acquired during the interview.

7.3.2 Types of interviews

7.3.2.1 General

In terms of questioning patterns, interviews are divided into the following three types:

a) structured interviews (scripted with predetermined questions);

b) unstructured interviews (giving interviewers freedom to explore topics);

c) semi-structured interviews (questions are partially prepared in advance).

A special technique is the critical incident technique (CIT) that focuses on a specific event and experience. It can be used for all types of interviews mentioned above.

7.3.2.2 Structured interviews

The questions in this type of interview are predetermined as a standardized list. The list may use both closed questions and open questions. In order to avoid influencing the interviewees, the interviewer should keep the conditions exactly the same in each interview. Questions should be asked in the defined sequence and wording, and if possible in the same tone of voice. Usually the questions are read by the interviewer, who tries to appear neutral and to minimize any external effects.

The advantage of structured interviews is that the answers of different respondents are more or less comparable. But this method is not suited to identifying new issues beyond the focus of the questionnaire.

EXAMPLE Examples of questions:

— Did the information you found help you in your research? (Yes/No)

— Did the library resources you used affect any of the following aspects of patient care for you: diagnosis, choice of tests, choice of drugs, choice of other treatment, length of hospital stay, advice given to patients, other? (Select only one answer and specify in the case of 'other')

— To what extent do you rely on the library staff in finding the business related information you seek? (Frequently –Occasionally – Never)

7.3.2.3 Unstructured interviews

The goal and subject of the interview are predetermined, but the sequence and wording of the questions can be changed by the interviewer. The interviewer should understand the object of the interviewing project. Open questions are frequently used. This type of interview aims to elicit interviewees' characteristics by flexible attitude in conversation.

The advantage of unstructured interviews is that they can identify attitudes and conceptions of interviewees in detail. The disadvantage is that the method is labour-intensive, and it will usually be difficult to code and analyse the collected data.

In order to obtain a detailed picture of an interviewee's experience, so-called 'narrative interviews' can also be conducted, where the role of the interviewer is primarily to prompt the interviewee to select and tell the relevant stories.

EXAMPLE Examples of questions asked during a narrative interview:

First, could you tell me about your good or bad experience in libraries?

Then, formulate questions in the individual context:

— Did the library give you any help?

— If yes, what kind of help?

— Does your local library provide the media and/or services that you need?

— What media and/or services would you like to find at your local library?

7.3.2.4 Semi-structured interviews

The two types of interview described above show opposing characteristics. In practice a mixture of both (i.e. semi-structured interview) is most often used. A semi-structured interview asks the predetermined questions, but allows rephrasing or explaining of questions in order to prompt interviewees to respond. It maintains a clear structure with significant flexibility. The interviewer should make a note of the questions which were actually asked.

The semi-structured interview combines the advantages of the structured and the unstructured interview, but the greater flexibility in comparison to structured interviews will also involve a higher workload.

EXAMPLE Examples of questions:

— Did the information you found help you in your research? (predefined answer)

— Please describe what you learned from the information? (open answer)

— Are the library's electronic resources essential or marginal to your study or work? (predefined answer)

— What kind of electronic resources are essential for your study or work? (open answer)

— Did the library resources you used affect any of the following aspects of patient care for you: diagnosis, choice of tests, choice of drugs, choice of other treatment, length of hospital stay, advice given to patients, other? (predefined answer)

— What resources should the library offer for your patient care? (open answer)

7.3.2.5 Critical incident interviews

Interviews employing the critical incident technique (CIT) are known as 'critical incident interviews'. The critical incident technique is a research approach designed to draw out the most memorable aspects of an event or experience from the respondents. Respondents are required to recall a specific event and describe their experience and feelings related to that event from their own viewpoint and in their own language.

CIT can be used in individual interviews or focus group interviews.

The advantage of this technique when assessing library impact is the direct insight into individual experiences of library contact. The disadvantage is that coding and analysing of the data will be difficult and time-consuming.

EXAMPLE Examples of questions:

At the start of the interview, remind respondents about a particular contact with a library service, e.g. reference service:

— For what purpose did you need that specific information at that time? Why did you seek it in the library?

Then:

— What information, if any, did you get with the help of the reference service? Why was it useful?

— Did you use the information gained in this contact, and if so, did anything happen as a result?

7.3.3 Individual or group interviews

7.3.3.1 Individual interviews

An individual interview is usually conducted face-to-face. In addition interviews via telephone, video-conferencing or online chatting/instant messaging tools can be used. A face-to-face or video interview is preferable for clear understanding of the interviewee's non-verbal responses (gestures or facial expression). The individuals are sampled randomly or purposely from the targeted population (see 7.3.5).

When planning interviews with non-users as well as actual library users, a street survey approach in a populated area can be effective, but it may be difficult for the interviewer to intercept appropriate candidates.

EXAMPLE Examples of questions to non-users in a street survey:

— How often do you visit your local library? (identifying non-users)

— What discourages your using your local library?

— What would encourage you to use your local library?

— What library services do you think could be useful for you?

7.3.3.2 Group interviews

A commonly used group interview technique is the nominal group interview. The questions are put to all participants (interviewees) simultaneously, and all are expected to respond to the question posed by the moderator. In order to keep personal interaction at a minimum level, a limited procedure of answering including silent writing can be employed. In order to achieve a conclusion, the answers can then be discussed and prioritized one by one by the group. Group interviews can also be conducted by videoconferencing and in a web-based environment.

Advantages of the nominal group technique are:

— It can produce well-considered ideas by giving time for reflection.

— A more equal participation among group members will be achieved.

— The influence of group opinion on the individual can be avoided to some extent.

— The final prioritization can lead to clear results.

The disadvantage is that the method dispenses with the richness of ideas generated by interaction of the participants.

Sometimes this technique can be combined with that of focus group interviews (see 7.3.3.3).

EXAMPLE 1 Example of a procedure for identifying the perception of library impacts:

a) Open questions as to the impact of a library are put to all participants; the written responses are collected.

b) The ideas in the responses are clarified and amalgamated in a group discussion.

c) Each participant is then asked to evaluate the pooled list of responses individually and to vote anonymously for the most important forms of impact.

EXAMPLE 2 Examples of questions:

— What are major benefits for you when using the college library?

— What services of this library do you like/dislike?

— What library programmes are useful for you?

7.3.3.3 Focus group interviews/discussions

7.3.3.3.1 General

Focus group interviews are group interviews in the form of a discussion among a small number of selected individuals on topics introduced by the moderator. Data are gathered not only from participants' responses but also from the discussion among them. Focus group interviews explicitly utilize and rely on group interactions. The dialogue among participants generates a broad coverage of a topic and can raise additional questions.

Virtual focus group interviews can be conducted via computer-mediated discussion. They have both strengths (e.g. easy to convene and gather data) and weaknesses (e.g. difficult to detect deceit and to establish rapport among participants).

The focus group interview needs a moderator (facilitator) and someone taking notes. Moderators should be trained in facilitation and, if library staff, should not be known to the participants.

7.3.3.3.2 Topics of focus group interviews

Focus group interviews on library impact can discuss as basic topics:

a) the participants' opinion of the general value of libraries (e.g. the library as place for quiet research or for children's learning);

b) the benefits that participants experienced when using library services (e.g. new skills in information seeking).

The first topic – assumed value of libraries – may include direct and indirect, short and long-term potential benefits. Non-users' opinions can be interesting here. The second topic should be mainly discussed by actual users (or former users) and focuses on the participants' own experiences (which might include non-beneficial impact). The expected or experienced impact can vary widely among focus groups according to the social or educational background of the participants.

The advantage of focus group interviews is that they stimulate the discussion among participants and thus obtain a wide range of responses. Their disadvantage is that the discussion tends to be influenced by a few dominant people and thus to generate biased outputs.

EXAMPLE 1 Example of a series of questions (topic: general value of libraries):

a) How do you see the educational role of libraries?

b) Do you think that libraries can influence the economics in your community?

d) Can you suggest how libraries could support social inclusion?

EXAMPLE 2 Example of a series of questions (topic: experience of library benefits):

a) For what purposes do you usually visit the library? (Prompt if necessary on topics: place to read, place to use the Internet, place to meet friends, etc.)

b) What advantages (disadvantages) did you experience in using your library?

c) Are there any other points that you would like to raise relating the influence of the library on your work, study or leisure pursuits?

7.3.4 Choice of interviewees

Interviewees should be systematically recruited in order to represent a broad variety of stakeholders and/or to address specific issues. A pilot test of the interview questions will support this choice.

Generally, interviewees will be chosen who have individual experiences and/or general knowledge about the interview topic. If the object of the interview is to identify the general attitude towards libraries, non-users may be added to the sample.

For effective focus group interviews, the number of participants should not be large, preferably between six and 12 persons. The composition of the group will be especially important for focus groups in which interaction between participants is indispensable. There has to be sufficient diversity to encourage discussion, but too heterogeneous composition may result in conflict.

A group should be set up in advance through invitation, clarifying purpose and time.

7.3.5 Required skills in conducting interviews

The success of interviews depends strongly on the competence and expertise of the interviewer or moderator. The interviewer or moderator should possess the basic skills of interviewing and should:

— maintain a balanced neutral attitude;

— formulate questions clearly and carefully;

— ensure a logical flow of the questions so that the conversation can proceed naturally;

— avoid leading and over-complex questions.

If the interviewer or moderator is an outside expert, that can help to ensure neutrality.

In order to facilitate the communication process, it is advisable to start with easy targeted questions to gain the interviewees' confidence (e.g. *What about this library service is important to you?*). When engaging in in-depth interviewing, interviewers need to know the social background and attitudes of the participants.

7.3.6 Recording the interview and data analysis

Although interviews typically involve a small number of participants, they can yield a significant amount of data. Therefore it is advisable to record the interview by data recorder with the participants' permission and transcribe the recorded data later. Taking brief notes in the process of the interview is also essential for interpreting the recorded data. There are methods such as CAPI (Computer Aided Personal Interviewing) or CATI (Computer Assisted Telephone Interviewing) for recording interviews.

Immediately after the interview, the moderator and the person taking notes should meet to discuss the results.

The first step in data analysis is categorizing the data by coding. Specific topics can be identified and the transcripts marked up to show occurrence. Then the analysis proceeds to organizing and grouping like data together to extract their meaning, which leads to tentative conclusions. It is crucial to consider differences in the nature of data. Structured and unstructured data may need different approaches.

Qualitative data analysis software links data and concepts through coding.

7.4 Self-assessment of users

7.4.1 General

Self-assessment in the sense of this International Standard is the process of critically reviewing the quality of one's own skills, knowledge, or confidence. This would normally be done through a paper-based or online questionnaire where some or all of the questions require respondents to rate themselves on a scale.

Self-assessment can be applied as one-time exercise or over a period of time.

7.4.2 Self-assessment used for impact evaluation

Self-assessment of library users can be an effective method for libraries to demonstrate their impact, especially with regard to the outcomes of user training or of reference interviews. Self-assessment can be operated before and after contact with library activities in order to show the library's influence.

A library seeking to demonstrate the impact of an information literacy programme could require attendants to complete a self-assessment questionnaire both before and after the programme. The attendees are asked to assess what they learned in the programme and to what extent they now master certain skills. In most cases, they are confronted with predefined statements on a 5-point (or other) scale. When the results of individuals are collated, insights can be obtained as to overall levels of competency of the group.

A simple questionnaire for self-assessment of users' "library skills" might look like this:

EXAMPLE Please rate your self-confidence as follows (1 = not confident, 5 = very confident)

1)	Using an online catalogue to look up books	1	2	3	4	5
2)	Finding books on the shelf using call numbers	1	2	3	4	5
3)	Using a database to find periodical articles	1	2	3	4	5
4)	Writing a correct citation in a bibliography	1	2	3	4	5
5)	Finding sources on a specific topic on the Internet	1	2	3	4	5
6)	Evaluating an Internet source (authority, bias)	1	2	3	4	5

In addition to the self-assessment questionnaire, students could also be asked to estimate:

— from which sources they obtained their information expertise;

— whether they benefited from a library training.

Most studies using self-assessment for identifying library impact have focused on the simple skills of information seeking and information use as shown in the example above. But models have also been developed for the self-assessment of more differentiated skills and knowledge. See Table 1.

Table 1 — Example of self-assessment (eLene-Teaching and Learning Centre, 2008)

Competence	Main question	Criteria	Self-assessment 5 = totally agree 1 = totally disagree
Managing information	Sort information found and make it searchable.	I record information and its sources in such a way that I can find it easily.	
		I organize information in such a way that I can use it easily (order, classify, store, add keywords).	
		I obtain and store text, data and media according to the rules that are formulated with the text, data and media.	
		I quote sources (text, data, images and sounds) in a correct way: I know the difference between paraphrasing - citing and copyright - creative commons.	

Self-assessment can be used over time for the same group, e.g. pupils of the same form or students of the same term, so that long-term effects of library training and/or library use can also be identified.

7.4.3 Advantages and problems of self-assessment

The method is simple to administer and therefore widely used. Another advantage is that self-assessment may provide information that is not easily determined by other methods, such as how much effort respondents expended on their tasks in a training course, or how they rate the level of difficulty of the tasks.

The weakness with the approach is that people might under- or overestimate their competencies or confidence leading to a lack of accuracy and consistency in responses across a group. The scores in self-assessment are often higher than the results when the same persons undergo a test (Ross, 2006). In a project of 1991, that compared freshmen and senior students by test and self-assessment, the seniors rated their competences much higher than the freshmen, but tests showed “no dramatic trend of higher proficiency” (Greer, Watson, Alom, 1991).

Another problem is that respondents might answer what they think they are supposed to say, namely that they have acquired new skills and competences via the library’s training.

Self-assessment should not be used singly but should be combined with other qualitative methods such as focus groups or semi-structured interviews. Results of self-assessment of users’ gain in skills, knowledge and confidence can also be validated by tests.

7.5 Collecting anecdotal evidence

7.5.1 General

Anecdotal evidence is based on anecdotes or stories, obtained informally from personal observations and experiences. The evidence has not been collected systematically nor empirically tested.

Anecdotal evidence is usually not considered scientifically or statistically valid, but it shows areas for further investigation and can be used for substantiating and illustrating results of other research methods.

7.5.2 Sources for anecdotal evidence of library impact

The following sources can be used for collecting anecdotal evidence in libraries:

a) *User comments*: Libraries have collected user opinions on library services and resources by offering opportunities for comments which are answered by library staff. Whether these are print comments deposited in an actual box or online ones sent through a virtual box, user opinions can range from service complaints to appreciation of how the library helped them. The latter can provide positive anecdotal evidence of library impact.

b) *Questionnaires*: A systematic collection of anecdotes is possible via questionnaires, if the questionnaire allows free answers in specified parts, or if among the predefined answers to a question there is an option such as "other (please explain)".

EXAMPLE 1 Example of additional options for answers:

Is there anything else you would like to say about the library?

— "I live in the neighbourhood; when I have a free hour I come here, and I always find someone I know."

— "Coming to the library I can focus on my work, so I can more quickly prepare for my exams."

c) *Interviews:* In all types of interviews, most answers will consist of free text formulated by the respondent, though there may be "yes/no"-answers. Interviews yield high numbers of stories about the respondents' opinions and/or experiences. If group discussions deal with a specified topic, the anecdotes emerging in the discussion can describe different aspects of the same topic.

EXAMPLE 2

Question: Why do you visit this library?

— "Every evening I jog from home to the library, stop here for a while to read something, then jog back home. If I hadn't such a pleasant destination, I would give up jogging!"

— "For me it's important because here I can find help."

— "I think it's aesthetically beautiful: I enjoy the opportunity to work in such a beautiful place."

d) *Anecdotes told by library staff:* Staff members directly employed in user services (e.g. reference service, lending services, user training) are asked to write down "stories" about positive and negative outcome of their contacts with users. The topics of such anecdotes will usually be too diverse for trends to become visible, but on the occasion of a new or modified service the experiences with user reactions may be numerous enough to allow identifying changes in attitudes and behaviour, though the reactions can differ markedly.

EXAMPLE 3 Introduction of Internet access in a small rural library: stories told by staff

— "A woman who had little computer experience and no knowledge of the Internet or email… She is very interested in machine embroidery and is now searching the Internet for embroidery patterns…"

— "M. is a refugee and speaks very little English – he has been in England for just a few months. He uses the computer to access the Internet so he can follow events in his own country. It gives him encouragement to be able to read about things from home."

7.5.3 The use of anecdotal evidence for impact assessment

7.5.3.1 Structuring

Collected anecdotes and stories are initially a conglomeration of personal reports, disparate in length, language and content. When collected via free answers in a questionnaire or an interview, the stories pertaining to the same question will show coherence as to subject.

Generally, the collection of anecdotes needs to be structured and grouped into representative categories of impact in order to make patterns in the data visible.

Possible categories for free comments to an impact survey:

a) the library as place for meeting and communication;

b) support for learning and studying;

c) social inclusion of fringe groups;

d) safe and inspiring place for children.

Such structuring allows identifying trends in the respondents' statements.

EXAMPLE If of 50 anecdotal answers in a survey there are 30 describing the library's importance as quiet and safe place for reading and studying, it can be assumed that this aspect is very valuable for the respondents.

7.5.3.2 Comparison with other methods

While survey and interview techniques are acknowledged methods in qualitative social research, anecdotal evidence is usually not considered scientifically valid. It may be used as a source of hypotheses for further investigation and for supporting other research methods, however.

Advantages of anecdotal evidence are:

— the stories can bring in more topics and more aspects of a subject than the planners of surveys and interviews might have devised;

— experiences and opinions described in the form of narrations will give a more colourful and impressive picture than results and trends expressed in percentages.

Disadvantages of anecdotal evidence are:

— the statements are generally even more biased than answers in surveys and interviews, as the perspective will be overdrawn in a story or anecdote;

— samples are often too small for identifying trends;

— while answers to predefined questions are for the most part unambiguous, the information given in anecdotes may be misunderstood, especially due to unconventional wording.

Anecdotal evidence will be especially useful when joined to methods that are considered scientifically valid such as results of surveys and interviews or of observation and tests. Short, pointed and animated descriptions will illustrate the data and can be even more convincing than statistical statements.

8 Observed evidence

8.1 General

The methods grouped under "observed evidence" employ observation of user behaviour during contact with library services, including direct observation by researchers as well as observation by technical devices, e.g. via video-recording or log analysis. Self-observation, that is users' self-recording of their learning developments, is included. Citation analysis in the sense of identifying changes in citation behaviour after library contact is included.

Another perspective focuses on tests, used for identifying an increase of skills and competences in users after library contact, especially after information literacy training.

8.2 Observation

8.2.1 Structured or non-structured observation

In structured observation, the observer is provided with a schedule that shows what to look for in the investigated subjects' behaviour and how to record and code the observations. The observation schedule ensures that observation and recording are done systematically.

Such a schedule need not be large, but could be restricted to limited data collected by observation at specified points of time.

EXAMPLE A public library has used the media to promote services targeted at its population of non-native speakers. The library now wants to know whether this has encouraged more persons out of that population to come to the library. The library offers a newspaper rack with newspapers in the relevant non-native languages and an information corner with books and brochures in the same languages. Twice a day at specified times a staff member counts visitors reading the non-native newspapers or browsing the books and brochures. Data show an increase of visitors in both areas

In unstructured observation, only a general frame for the study is given and the observer records data that seems relevant to the subject of the observation.

8.2.2 Participant or non-participant observation

In participant observation, the researcher takes part in the activities of the group or community that is being studied in order to observe the behaviour.

EXAMPLE A library staff member attends student classes, to obtain a better understanding of the extent to which library resources are referred to and how the resources support learning and teaching.

Non-participant observation means that the observer is not part of the observed group, but the subjects may know that they are being observed. In non-participant observation the task can also be carried out by other means such as use of a camcorder or video recorder.

8.2.3 Open or covert observation

In open observation the observed subjects are aware that their behaviour is being observed, and discussion between the observer and subjects is actively encouraged. This might be the case, for example, where users discuss how they go about undertaking a particular library task such as searching for journal articles.

Usability testing also is part of open observation as it involves creating a list of tasks that participants follow when using a product or service and then observing how they accomplish those tasks.

The problem of open observation is that the subjects' behaviour might be influenced by the knowledge of being observed. In order to ensure valid results, it is expedient to use covert or unobtrusive observation, where observers do not make themselves known, but watch and/or listen and take notes. Cameras and recording devices may be used to ensure an accurate record of observed behaviour, but issues of data protection and consent need to be considered.

EXAMPLE 1 Example of open observation:

The library website is being redesigned to make it easier for users to find information by subject. Participants are recruited for a usability test on the current website and asked to go through a set of procedures to find information on their topic. Library staff record user actions with software and video cameras, noting especially where users experience difficulty. Based on usability testing, the website is redesigned and usability participants are given the same set of procedures to try on the revised site. The results show that the information is easier to find based on the changes made (Norlin, 2002).

EXAMPLE 2 Example of covert observation:

Records of reference interviews between library users and library staff are used for identifying whether library instruction has influenced the users' levels of awareness and knowledge. Before each reference interview it is ascertained whether the user has had a library instruction or not. Templates need to be developed to ensure that the recording is systematic and consistent. The questions and remarks of users with library instruction show a higher degree of information literacy.

8.3 Log analysis

Log analysis can replace personal direct observation in use of electronic resources and services. The log files can come from various systems and computers, e.g. online catalogues, databases, library websites, and can reveal details of the user/ system interaction such as:

— domain names of users;

— date and time of the transaction;

— time spent with the search or the visit;

— referred pages and pages visited;

— wording of search questions;

— number of searches;

— use of links;

— number of downloads, etc.

The log files can also show detours or failures in searching or misconstruction of links or references.

Log analysis is used for individual users, but results may also be aggregated for a group. If log analysis is used several times for a specified group, it may be possible to compare the searching behaviour over time and to identify differences in the behaviour before and after library training or after a period of library use.

The advantages of this method are

a) that it is less time-consuming than direct observation, though data extraction and interpretation can take some time;

b) that it is unobtrusive.

There can be problems of using the data because of data protection rules, and it may be necessary to get consent from the users, e.g. by adding a confidentiality statement and asking the users to press an okay button after reading it.

8.4 Self-recording

Self-recording by users is an important tool for demonstrating library impact. Users are asked to record their behaviour and/or attitudes in information seeking and information use over a period of time in order to see whether the library has an impact. Diaries are the usual method for recording the particular services, facilities, or resources that subjects have used and how they felt about this. An assessment can then be made of whether there have been changes in patterns of use or in users' attitudes as a result of a library intervention.

The diary can be structured, giving a guideline to what should be observed, or unstructured, leaving the choice of subjects to the writer. To encourage continued participant engagement, and ease of analysis, good design and clear layout are essential.

EXAMPLE Example of a diary structure for each day (eVALUEd):

— activity (What were you trying to achieve?);

— resources or services used;

— results obtained (e.g. any problems encountered, relevant articles found);

— next steps (e.g. Do you need more information?).

Self-recording of users is a cost-effective data collection method for assessing library impact. Disadvantages are:

— The analysis of the collected data will usually be work-intensive.

— It can be difficult to recruit users for a continued participation, as they might perceive the recording as involving a significant workload.

— The results might be regarded as less objective than observation by neutral observers.

8.5 Citation analysis

The analysis of citations in student papers or doctoral dissertations has been used for assessing the library's impact on the information literacy of students. The method aims at demonstrating changes in citation behaviour after a specified period of library use or after attending information training programmes (see e.g. Middleton, 2005; Tuñon and Brydges, 2005). The use of scholarly sources, rather than reliance on open websites, demonstrates the effectiveness of information skills training. Evaluating the number and variety of sources used by students who have or have not received instruction (or before and after instruction) can provide evidence that library instruction has been effective and that the library has had an impact on student learning.

Citations are evaluated not only as to publication format, year of publication, and language, but also as to the quality of the resources cited. Usually, quality is rated by the accuracy of the citation. Other criteria that have been used are:

a) the scholarly character of the resources (e.g. citations from peer-reviewed journals);

b) the currency of the resources cited;

c) the percentage of electronic resources cited;

d) the relevance of the resources for the paper (assessed in cooperation with academic staff of the student's department).

The method is time-consuming, and the results may not be statistically valid. The advantage is that the method is unobtrusive. It can be used instead of tests, if the persons are no longer available, but the papers are.

EXAMPLE Two sections of the same class of students received a library instruction session, while the third section of the class did not. Bibliographies of the students' term papers were then examined to determine if the numbers and types of sources cited differed between the two groups. Library instruction was determined to be effective, in that students receiving library instruction were significantly more likely to cite journal articles and other scholarly resources than those students not receiving the library instruction (Hurst and Leonard, 2007).

8.6 Testing the impact on knowledge and skills

8.6.1 General

Testing changes in the knowledge, competencies and skills of library users is certainly the most-used method in observational impact assessment. Tests have definite advantages compared to the methods described before:

— They are easy to collect and to analyse and therefore cost-effective.

— There are numerous standardized forms that can be used.

— The response rate is usually high, especially when the test comes after a training programme.

— The results are clear and non-ambiguous.

It is especially important for impact assessment that pre- and post-tests in training services can directly identify an impact of the library on the attendees. Though other influences may have contributed, it is very probable that the higher skills in the topic of a training session can be attributed to that session.

8.6.2 Information literacy

8.6.2.1 General

Traditionally, libraries taught their users "library skills", also known as "bibliographic instruction", so that users could use the catalogue effectively and access all the resources in the library. More recently, such terms have been replaced by "information literacy" which is understood to be more wide-ranging than knowing how to use a library, but an aspect of lifelong learning that refers to attributes of people who are able to find, assess and use information wherever it may be located. This includes the skills for using information technology to access and retrieve information.

Tests are primarily used for assessing changes in information literacy. Courses to inculcate library and information skills are common in all types of libraries, especially in academic libraries, but increasingly also in school, public and special libraries. Librarians attempt to demonstrate the impact of their teaching by showing that attendees have gained measurable information competencies and the ability to use a variety of library and other resources.

8.6.2.2 Information literacy standards

A number of standards for information literacy have been formulated. Possibly the best known of these, specifically for academic libraries, are those of ACRL (2000) which describe the information literate student as able to:

— determine the nature and extent of the information needed;

— access needed information effectively and efficiently;

— evaluate information critically;

— use information effectively and understand the economic, legal, and social issues surrounding the use of information;

— access and use information ethically and legally.

The ACRL standards also provide extensive performance indicators and suggested outcomes for each standard, which could be used in constructing test instruments. Other well-known sets of standards are the Australian and New Zealand Information Literacy Framework (Bundy, 2004), and the Seven Pillars of Information Literacy from SCONUL (SCONUL, Seven Pillars).

Standards for school libraries are also available, e.g. the standards of the Massachusetts School Library Association (2009) and of the American Association for School Librarians (2007).

8.6.2.3 Information literacy tests

Information literacy tests are developed to obtain objective evidence for the extent to which information skills were acquired through library instruction. Tests can have different formats; for example print-outs or online questionnaires, formatted as multiple choice questions or giving examples of problems to solve. Users' own evaluation of the training, their satisfaction or their personal opinion of their own information skills, are not included.

In order to assess whether changes in information skills are due to the library's training, it is important where possible to conduct pre-tests as well as post-tests to see whether any measurable improvement has taken place, and to test differences statistically to see if they may be regarded as significant.

8.6.3 Methods of testing

8.6.3.1 General

A number of approaches to testing skills can be discerned. The main approaches are:

a) multiple choice tests (frequently online) about material taught (e.g. true or false questions; selecting the correct answer from a list of possible answers);

b) evaluation of the use and variety of resources used in subject-specific writing tasks, for example whether the tested persons used academic journal papers and other scholarly resources, rather than mostly websites or non-peer-reviewed resources;

c) assessment of portfolios of evidence depicting use of information resources (e.g. where portfolios of different examples of written work have been kept over a period and then assessed);

d) analysing and marking the reference lists that are produced for term papers or assignments, using score sheets or rubrics (see 8.6.3.3.3).

8.6.3.2 Tests for basic information literacy skills

Basic skills are the more easily inculcated skills such as finding and retrieving information from catalogues, databases and the web, selecting search terms, and recognizing instances of plagiarism. Large classes in academic institutions are often tested with quizzes that assess students' knowledge of the library and its information resources. Similar tests have also been designed for school libraries or public libraries (e.g. Peabody Institute Library of Danvers). These tests are usually delivered online, but may also be paper-based or even oral.

Test questions for assessing basic skills are relatively easily framed in terms of yes/no answers, or in selecting the correct answer from a multiple-choice list. These tests have many advantages:

— They are not labour-intensive.

— Marks can be calculated automatically.

— The results are to a large extent reliable.

— The results are easily comparable among different classes or groups or over a number of years.

8.6.3.3 Assessing "higher order" competencies

8.6.3.3.1 General

The "higher order" information literacy competencies of being able to evaluate, organize and use information, are generally taught in academic institutions. They are more difficult to test and may have to be approached through surrogates, such as students' bibliographies, portfolios and other written work, to find evidence of the ability to make use of knowledge resources. Assignments such as the construction of annotated bibliographies on particular topics, explaining why the items are relevant, can therefore be used for assessment. Specific evaluation such as the extent and quality of the use of information resources in essays written on specific subjects also gives evidence of competency.

8.6.3.3.2 Portfolios

The assessment of complex tasks may be seen as "authentic assessment" of what students can do rather than what they know. The use of portfolios (often electronic or e-portfolios) of student work as it changes

over time while learning takes place, has been recommended as suitable for assessing information skills acquisition. The co-operation of subject teachers to assign tasks suitable for assessment may be required. Standardising the assessment then becomes much more difficult, especially if a number of tutors and classes are involved.

8.6.3.3.3 Use of information in writing tasks

Grading rubrics, which involve the construction of a scoring grid that clearly states the learning objectives (which might be mapped to information literacy standards) and outcomes for different levels of achievement, may be used to assess writing tasks. Rubrics are helpful to students as they are able to understand what is required of them, but constructing and using them are time consuming and labour-intensive, as well as difficult to standardize. An example of a simple rubric that may be used or adapted for assessing the information literacy components of writing tasks is given in Table 2:

Table 2 — Rubric for assessing information literacy

Learning objective	Inadequate	Satisfactory	Advanced
Understands research problem	Unable to articulate a research question.	Research question stated but not clearly or succinctly articulated.	Research question clearly and succinctly articulated.
Finds reputable information	Sources from web or popular press. Some may be irrelevant.	Uses one to three relevant scholarly resources.	Uses five or more relevant scholarly resources.
Synthesizes information and uses it for a specific purpose	Quotes sources directly without comment or evaluation. Irrelevant information included.	Synthesizes some ideas. Considers supportive or contradictory opinions to construct an argument.	Synthesizes main ideas, recognizing any that are biased or contradictory. Formulates an argument based on a variety of sources.
Cites sources correctly	Citation format not consistent or not conforming to recognized style.	Recognizable citation format with few errors.	Consistent citation format; no errors.
Avoids plagiarism	Not aware of plagiarism; some evidence of cutting and pasting or copying may be present.	Aware of plagiarism; no copying.	Aware of plagiarism; no copying.

8.6.3.4 Standardized tests

A number of standardized information literacy tests have been developed for use in different institutions mainly in the United States and they produce results that enable institutions to compare them with one another. An example of a standardized test is SAILS from Kent State University (Project SAILS). Standardized tests cannot be tailored for specific institutions or situations, and test mainly basic skills that can be addressed with multiple choice questions.

Student learning and achievement in schools is often tested by educational agencies at the local, regional or national levels. These standardized tests may include questions that are not specifically related to library services and programmes, but might nevertheless test many of the information literacy competencies which can serve as indicators of the impact of library teaching and learning programmes. Student achievement at one school or district can be compared with others. In schools where all or most learners are able to answer library-related questions correctly, their scores may be used to indicate the impact of the information literacy tuition in the school library.

EXAMPLE Example of a standardized test question:

Which of the following statements are true and which false about the library catalogue?

— It tells you which books are in the library.

— The catalogue only has information about printed materials.

— It tells you how to search the World Wide Web.

— It lists the titles of articles in journals.

— It tells you where to find books in the library.

8.6.4 Problems of tests

As tests are often designed to facilitate marking or grading, they tend to focus on quantifiable skills that may be easier to measure, but also easier to master. Such tests tend to be less indicative of real learning. Fairly simple tasks such as arranging books in shelf-order, choosing appropriate search terms from a list, or selecting a correct citation, are easy to mark, but do not give much insight into the kinds of information literacy competencies that are needed for effectively choosing, evaluating and using information. They might therefore not adequately measure a person's higher level thinking skills, or demonstrate the ability to apply and use information for their own tasks.

Test results on their own do not necessarily demonstrate library impact. In order to demonstrate impact, it is necessary to be able to show that the instruction has made some difference, for example, that results of tests after information literacy teaching are significantly improved from results obtained before the teaching started.

8.6.5 Use of test results

Demonstrable evidence of libraries' impact on learning can be used as a powerful indicator of the value of libraries. At present there is little consensus on how assessment results are to be implemented, so that many institutions are still designing their own teaching modules and tests. The results of such tests may be comparable over a number of years at the same institution, but they are not comparable with other institutions where circumstances and test instruments vary.

Results of tests could show up flaws in terminology, in levels of testing (too easy or too difficult) or in amount of material learnt. They can indicate the need for improvements in methods of instruction or of the instruments themselves. Dissemination of test results to other librarians or to subject teachers can lead to further collaboration, both with colleagues and with faculty.

Assessments may be used to demonstrate to the parent body that the library is adding value to one of the institution's main goals, the improvement of learning. Simple evidence might consist of the numbers of participants in classes or the class content, to the more meaningful results of carefully constructed test instruments which show measureable improvements in specific skill-sets that successful students require.

9 Combining methods for assessing library impact

9.1 Combining qualitative and quantitative data

Combining methods can include using both qualitative and quantitative data or employing multiple methods to work with either one of those. A study using quantitative and qualitative data might for instance include test results, students' grades, interview findings, and self-assessment.

The quantitative approach involves, for example, data mining and statistical analysis of large numbers of cases to identify patterns across sub-groups and different variables. Effective quantitative approaches to assessing impact, for example, compare library use data with appropriate individual and institutional data to ascertain whether there is a statistical relationship between library use and performance.

The qualitative approach is focused on a high degree of user involvement in identifying and explaining reasons for performance and actions. Qualitative analysis focuses on examining relationships between actions and outcomes.

It should be noted that in comparing library-related data with external data there may be other factors and variables within and beyond the library that affect impacts and outcomes. For example, entry statistics can be affected by other facilities housed within the library. While there may be a relationship between different data sets, care should be taken in ascribing library activity as the cause of an impact, especially outside the library. The services of a skilled data analyst could be needed to determine the nature of these relationships.

Qualitative methods add texture and meaning to the quantitative data and help identify library impacts. Together, they offer the potential of powerful tools for analysis and understanding of user interaction with the library.

Data mining (see 5.6.2.3) is considered a mixed method in the sense of this clause, as it can use data sets from different organizations and different methods to analyse them. Quantitative data from the library are compared with other data from inside or outside the library. The data are then analysed using statistical analysis software to determine relationships and significance.

9.2 Examples of combining methods to show library impact

9.2.1 General

The examples below show different methods that libraries might combine to identify and demonstrate impact in three critical areas:

a) impact of the library collection;

b) impact of the library as place;

c) impact on users' success.

9.2.2 Assessing the impact of the library collection

A library collection comprises documents held locally and remote resources for which permanent or temporary access rights have been acquired. If the collection is well adapted to the needs of the library's population to be served, it can positively influence research and learning.

Many libraries have made major investments in electronic information resources, including electronic journals. Quantitative data on electronic journal use can be obtained from COUNTER compliant reports (COUNTER, 2012). However, they do not show how users applied the journal articles to their work, and combining data will better ascertain library impact and user value. See Table 3.

Question: How are electronic journals used and what is their value to research?

Table 3 — Examples of combined measures for assessing the value of e-journals

Measures	combined with	Measures
Number of journal article downloads		Findings from focus groups on value of electronic journal access
Journal subscription costs		Answers to survey questions (open-ended or comments) related to usage of electronic journals, time saved, and willingness to pay
Bibliometric studies on references in publications		Responses from individual interviews on value of electronic journals
External research awards (number and funding)		Critical incident reports on use of electronic journals in recent publications
Number of research publications for which the library provided information resources		Interview accounts of the role of the library in research productivity

9.2.3 Assessing the impact of the library as place

In spite of increased remote access to library services and resources, libraries continue to be very important as physical places. Attributes that comprise the physical facility include user places, IT equipment, collections, services, and a stimulating environment not only for learning and studying, but also for meeting and communication. Libraries collect quantitative data related to the use of their services and facilities, but these counts do not indicate the reasons why people visit libraries or the value of a physical library for individuals and the community. Combining methods provides both statistical use data and an understanding of impact. See Table 4.

Question: How does the library as place influence users?

Table 4 — Examples of combined measures for assessing the library's value as place

Measures	combined with	Measures
Entrance counts or counts of user places occupancy		Results from individual interviews on reasons for coming to the library
On-site transaction counts (reference transactions, loans etc.)		Findings from focus groups on value of the library's services
Attendances at user training		Self-assessment of gains in competencies and skills
Attendances at special events or programmes		Observation of behaviour *in situ* or as result of the attendance

9.2.4 Assessing the impact of library use on users' success

9.2.4.1 General

The impact of the library's services and resources on users' success can be assessed by relating the resources that users have consulted and the services they used to their subsequent performance. Success in this context is restricted to academic and professional success and will not include acquiring skills or proficiencies in specific tasks.

Evidence of success may be found when:

— high grades are achieved in tests or examinations;

— qualifications are completed within the minimum time;

— drop-out rates are low (student retention);

— qualifications lead to employment;

— specific academic institutions are selected by students based on the strength of their libraries;

— researchers publish more, get more research funding, or achieve higher citation rates on account of library services and resources.

The focus in this clause is on the extent to which the library's resources and services have been influential in success. Data of library use can be extracted from library systems as reflected in the frequency of library use, whether expressed as borrowing library items, library visits as reflected in gate counts, downloads of electronic resources or attendances at training lessons. These statistics then have to be matched with success data in order to explore possible correlations.

The measurement of the library's impact on users' success has particular relevance to libraries whose primary function is to address the information needs of learning and research, namely school and academic libraries. However, the approach may be applied in any library where evidence is being sought of the library's impact on learners and learning.

9.2.4.2 Comparing usage data and students' course results

Data on library use are gathered from library systems and compared with student assessment data for the same individuals. All data must be strictly anonymous and conform to institutional ethical constraints. The aim is to identify whether there is a statistical relationship between students' library use and their degree results and/or speed of graduation. It is important to stress that even though statistically significant relationships may be detected, this does not mean that the relationships are causal, as other common factors or variables may account for the correlations. The particular value of this approach lies in being able to compare the performance of active library users with that of low users or non-users, or of students who had or had not received information literacy tuition to establish whether there are statistically significant differences in their respective academic results.

Very large data sets can be combined in order to find possible correlations between library use and academic performance. Data sets include library visits as reflected in gate counts, circulation of printed materials, accesses to electronic library resources, and student performance records.

EXAMPLE 1 An Australian university has built a sophisticated system of interlinked data sets known as "Cubes", which combines borrowing of printed resources, log-ins to electronic library databases and student performance records. They have been able demonstrate that "the more students use [the university's] electronic resources, the more likely they are to perform better." (Cox and Jantti, 2012)

EXAMPLE 2 A similar ongoing longitudinal study in the UK is finding comparable results, showing that there is "a statistically significant correlation across a number of universities between library activity data and student attainment." (Stone, Pattern and Ramsden, 2011)

A slightly different approach to combining library and academic success data may be found in linking the grade point averages (GPA) of graduating students with data reflecting the extent to which they had received information literacy tuition both at first year and at more senior levels during their studies.

EXAMPLE 3 A study of the University of Wyoming determined which undergraduate courses contained embedded information literacy instruction, and compared the GPAs for students who had completed those courses with those who had not. Students who had completed courses with information literacy components beyond first year level had slightly, but statistically significantly higher GPAs than students who had not. These results were reinforced by qualitative findings from focus group sessions with graduating students (Bowles-Terry, 2012).

See Table 5.

Table 5 — Examples of combined measures for assessing library impact on students' success

Measures	combined with	Measures
Students' attendances at user training lessons		Evaluation of the same students' work such as portfolios, essays
Use of library services, collections, facilities		Student grades in examinations
Student grades in examinations		Interviews with students and academic staff on contribution of the library
Use of library services, collections, facilities		Student performance on standardized tests

9.2.4.3 Influence of libraries on student recruitment and retention

Investigations into the role of libraries in student retention have suggested that libraries can indeed have an effect in preventing student drop-out and retention rates (Foster, 2003).

EXAMPLE A major study in the US correlated library expenditure and the number of professional staff in the library on the one hand with data on student enrolment on the other. Results were obtained from more than 500 institutions in the USA and showed a significant positive relationship between increased expenditure on library resources and professional staff, and student retention (Mezick, 2007).

9.2.4.4 Influence of libraries on research grants

Studies have shown that access to library resources plays a critical part in the success of research applications by those in academic, government and corporate organisations.

EXAMPLE A study in a large US research university showed a positive correlation between use of library resources and successful grant applications. This study was extended to other universities internationally with similar results (Tenopir et al., 2010).

9.2.4.5 Influence of Internet access in the library on job finding

Providing Internet access in libraries enables library users to connect to a wide range of information and services that are only available through the Internet. Postings of job openings and applications are occurring more frequently in this mode. Studies have shown that job seekers are using Internet access in libraries to find and apply for positions.

EXAMPLE The U.S IMPACT study employed a mixed method research design to assess the outcomes of public access computing (PAC) use in public libraries. Through the use of a survey and interviews, one of the study's major findings was that 40 % of respondents used library computers and Internet access for employment career purposes. This included not only looking for career opportunities, but also applying for jobs online and working on resumes. Interviews provided context and outcomes, including success in getting a job (Becker et al., 2010).

9.3 Advantages and disadvantages of combining methods for impact assessment

9.3.1 Mixed methods provide powerful analytical capabilities for identifying library impact. However, they require expertise in research methodology and data analysis that might be lacking in libraries. Adding external data to library data requires the willingness of other units outside the library to cooperate.

9.3.2 Advantages of combining methods:

a) Using different methods can corroborate findings.

b) Data from different sources add context and understanding to findings.

c) User narratives can be powerful complements to quantitative data.

9.3.3 Disadvantages of combining methods:

a) The data sets may not be compatible.

b) Data analysis may indicate correlation but not necessarily causation.

c) Data analysis tools and expertise are needed.

d) Control groups (e.g. those who did not receive instruction) could be required.

e) Collaboration is necessary for obtaining data from outside the library.

f) Permission might be needed to gather anonymised data on individual library use.

10 Assessing the economic value of libraries

10.1 General

Libraries can calculate the value of their services in monetary terms and assess how the library interacts in a larger economic environment. This is especially important if libraries need arguments for accounting for library budgets. Libraries are not alone in competing for public tax money and other sources of financial support. They have to show evidence of the importance of their activities and the value of their services.

Public, academic, special and school libraries all meet the same demands for more accountability. They are all part of an institution or community, and the library's activities must be relevant for and integrated with the mission and goals of the parent institution. The library management should be able to demonstrate that the funding is transformed into valuable services, appreciated by the users and supporting the institutions behind the funding.

Assessing the economic value of libraries can have two different meanings:

a) *The value of library benefits expressed in monetary terms*

The benefits produced by library services are calculated in monetary terms; the result may be compared with the institution's and library's investment into these services.

b) *The economic impact of libraries*

Another option is to identify a direct or indirect positive influence of libraries on the economic life of the community, the region or even on the national economy.

10.2 Calculating the value of library benefits to users

10.2.1 General

The economic value of library benefits can be established in different ways:

a) by calculating costs if a similar or related service is available in the market (replacement costs);

b) by calculating time costs: Monetary values can be calculated from the time spent on library services and the salaries (or average salary) of users;

c) by soliciting user estimates: Users (and non-users) estimate the monetary value of a library or a library service (e.g. a loan) for themselves or for society. This may be achieved by simple estimates, e.g. the value of one loan, or methods such as contingent valuation.

10.2.2 Calculating replacement costs for library services

Replacement or substitute costs for library services are calculated based on the costs incurred if users are forced to use alternatives. The method assumes that the costs of substituting services provide useful estimates of the value of library services. If people incur costs to substitute the library services, then those services must be worth to them at least what they paid to substitute them.

The simplest way for calculating a monetary value for a specified library service is to ascertain the current market value of the service, i.e. the current price at which the service can be bought or sold in the free market. Only some library services or products are offered in the free market, however. Examples are loans from commercial circulating libraries, copies made by copying services, document delivery services, audio-video (DVD's, CD's) rentals, or Internet access in shops or cafeterias. Related services may include the individual rentals or purchases of books, periodicals, or audio-visual products rather than borrowing them or using them in a library. See Table 6.

Table 6 — Example of pricing library services (Holt, Elliott and Moore)

Service	Substitute	Price in USD
Loan of children's book (paper-back)	bookshop	8,00
Loan of adults' book (paperback)	bookshop	14,00
Browsing newspaper	newsstand	0,50
Playing with toys	education resource store	15,00
Craft and activity programme	YMCA School Age Child Care	1,00/h

For the use of electronic journal articles, a monetary value can be calculated as cost per use. The cost of journal subscriptions is divided by the number of article downloads to arrive at a cost per use figure that can be compared with the costs of obtaining a similar number of articles from a commercial supplier.

The use of a library service does not, as a matter of course, show a direct benefit or outcome for the user. Establishing a market or surrogate price for a loan does not show whether the user profited from the loan.

10.2.3 Library value calculator

Market or surrogate prices as shown in 10.2.2 can also be used for showing to the individual users how much their use of library services would be worth in money. For this purpose, "value calculators" have been produced (e.g. Maine State Library). Users are offered an online form where they can check the number of times they have used specified services during a given time period. The market price or surrogate price of each service is then multiplied with the usage data in order to calculate the total monetary value of the user's library use. See Table 7.

Table 7 — Example of calculating the total value of library use

Library service	Unit cost (USD)	Use per month	Value of service (USD)
book borrowed	17,00	25	425,00
paperback borrowed	7,00	4	28,00
children's book borrowed	12,00	7	84,00
CD borrowed	9,95	3	29,85
newspaper use in library	7,50	2	15,00
adult programme attended	10,00	3	30,00
Internet access per hour	12,00	5	60,00
reference interview	15,00	2	30,00
		Value per month	701,85

10.2.4 Calculating time costs

The premise of this method is that the value that users place on the benefits they receive from library services must be at least as great as the value of time and effort that they expend when accessing and using those services. This can also be seen as user investment in library services. The time and effort includes the following:

— travelling costs (transport cost and the cost of travel time);

— costs of the time spent on actually using library services.

The travelling costs as well as the time that users spend on library use have to be assessed by surveying users or by other methods such as log books or interviews.

For assessing time costs, a user's time spent on going to and from the library and on using library services is multiplied with the hourly rate of pay, calculated either via individual salary figures, if available, or via the average salary of the population served by that library. This is not possible in cases where users have no regular income (e.g. children, students, stay-at-home spouses). Examples in literature are therefore predominantly taken from special library use.

EXAMPLE A study in special libraries calculated an average of € 22 per use in terms of going to and using library services. Reading library-provided information was not considered in this sum (Griffiths and King, 1994).

The problems of this method are:

a) The time costs would be higher for persons with higher salaries, though the value of the library contact might be the same.

b) The user's investment of time and effort might be marginal compared to the real benefit.

c) Library services may be used for recreation or for purposes unrelated to work.

d) People might combine different purposes in travelling.

10.2.5 User estimates of economic value

The methods described above for identifying the monetary value of library services are not adapted for assessing the financial value of library benefits as experienced by users. Use of solicited evidence is therefore recommended, namely user estimates of the financial value of the services they use and/or the benefits that they experience.

Trying to assess an economic value of library benefits by way of surveying users is a complex procedure. While the end result is numeric, the methodology focuses on the subjective estimates of individual users.

10.2.5.1 Estimating a monetary value for specified services

Users are asked to place a monetary estimate on their experience with a specified library service. This method has been mainly used for book loans in public libraries but can be extended to other clearly definable services such as loans of audio materials, reference transactions, or story-telling events.

As using a library service does not necessarily lead to an impact on the user, it is important to ascertain whether the user has experienced a benefit before asking for an estimate of an economic value.

EXAMPLE Users at four public libraries in the UK, when returning borrowed books, were asked whether the book had been useful for them (non-fiction) or whether they had enjoyed it (fiction). Those that answered positively were then asked to place a monetary value on their reading experience. The question was what price they would have paid to rent the book had this been required. The average estimates of value were 62,2 p for adult fiction and 66,3 p for adult non-fiction (Morris, Hawkins and Sumsion, 2001).

10.2.5.2 Contingent valuation

Contingent valuation is an economic method used to estimate the benefits of a non-priced good or service by examining the implication of not having the product or service. Contingent valuation generally uses a survey-based method developed to assess the financial value of non-profit organizations and services, especially projects in health care, environmental protection, education or culture. Value is explored by presenting subjects with various funding scenarios and service levels and asking them to make hypothetical funding decisions. For library services this means that persons directly or potentially interested in such services are asked to rate the value in monetary terms. The monetary estimate is solicited by the following questions:

— *willingness-to-pay*: What would you pay for maintaining this library/this special library service?

— *willingness-to-accept*: Which sum would you accept as a compensation if this library/this special library service were given up?

Usually, the surveys ask for payment or acceptance of money expressed by higher or lower taxes. Respondents are given options between sums they would pay or accept.

The contingent valuation method is applicable for considering use-values as well as non-use values. Non-use values include the following:

a) *option value:* the value that a non-user places on having the option to use the library at a later point of time;

b) *existence value*: the value of knowing that the library exists even though the respondent does not intend to use it;

c) *bequest value*: the value of preserving the cultural heritage for future generations;

d) *altruistic value:* the value that a non-user places on libraries as institutions for recreation and learning for other people, e.g. for children;

e) *community value:* the value of the library as a community resource and place.

Contingent valuation is often referred to as a *stated preference* model, in contrast to a price-based *revealed preference model*. It is probably the most frequently used method for the valuation of library benefits.

The problem of contingent valuation is that respondents are asked to put a monetary value on services or institutions that they usually do not consider from an economic point of view. They might misunderstand the questions and actually answer a different question. Generally, the values estimated by willingness-to-accept are higher than those estimated by willingness-to-pay and are seen as less reliable.

Contingent valuation has been most often used in public libraries (Aabø, 2005; Holt, Elliott, and Moore, 1999). The best-known example of contingent valuation in libraries is that of the British Library (Pung, Clarke and Patten, 2004). Contingent valuation has also been used in academic libraries to determine the value of periodical collections to users (Aerni and King, 2007).

EXAMPLE 1 Example of questions

Question: Where would you obtain the journal article if it were not available through the library?

— I would not bother getting the information.

— I would obtain the information from another source (please specify source).

Those who would use an alternate source to the library are asked this follow-up question:

— In order to obtain the same information, I would expect to spend… minutes of time and/or $...

EXAMPLE 2 Example of questions (Imholz and Arns, 2007)

The Overall Value of the Library

Please fill in all that you value with a dollar amount.

a) Of the following library programmes or services that you have used today, please supply a dollar ($) amount indicating the amount you would pay in additional taxes annually if it were not currently available at the library:

$_____ Assistance or information to aid your finances (e.g. save money, invest money)

$_____ Assistance in identifying financial aid for post-secondary programmes

$_____ Assistance with identifying post-secondary educational programmes

$_____ Obtaining legal information

$_____ Obtaining medical information

$_____ Assistance in learning new technology

$_____ Access to the Internet

EXAMPLE 3 Example of questions

What costs would you incur, if you could not use public libraries for a year?

☐ 1 to 50 EUR

☐ 51 to 100 EUR

☐ 101 to 200 EUR

☐ 201 to 300 EUR

☐ 301 to 400 EUR

☐ more than 401 EUR

10.3 Cost-benefit analysis

10.3.1 General

The monetary value that has been assigned to a library or a library service by the methodologies described above can be used for a cost-benefit analysis. Cost-benefit analysis is here defined as the attempt to measure the benefits of a project or institution in monetary terms and compare them with its costs. This can also be seen as return on investment (ROI).

A good ratio of benefits to costs or a high return on investment shows that the library uses its funds in a cost-efficient way and maximises its outcome within the frame of the given means. It does not prove that users have benefited from the services the library offered.

10.3.2 Cost-benefit ratio

The cost-benefit ratio or return-on-investment ratio is calculated by dividing the monetary value assigned to a library service or resource by the cost incurred in providing the service or resource. The results of return-on-investment studies are usually figures that represent how high the return is on each dollar (or other currency unit) invested in the library.

Several steps are necessary for calculating the cost-benefit ratio:

a) The monetary value assigned to the use of a library product (a service or resource) is calculated either by identifying a market price for the product (see 10.2.2) or by estimating such prices.

b) The product price is then multiplied by the number of times the product has been used, which adds up to the total estimated benefits of the product during the period in consideration.

c) This sum is compared to the costs for supplying the product.

If all products of a library can be endued with identified or estimated prices, then the sum of the total benefits of all products in a year can be set in relation to the library's costs in the same year (usually the budget).

The market prices of borrowed media used in the calculation usually refer to the current price when buying a product or renting from a commercial source. As the media in the library collection are for the most part used, their market price would not correspond to the purchase price as new. Some studies have calculated between 7 % to 25 % of the purchase price as the market price for borrowed media (Blanck, 2005, p. 47).

The calculation in Table 8 is based on moderate average market prices.

Table 8 — Calculation of cost-benefit (Blanck, 2005)

Data of use	Services and products	Identified prices (EUR)	Alternative to library	Estimated monetary value (EUR)
455 765	non-fiction	20,00	bookstore	9 115 300
277 769	fiction	10,00	bookstore	2 777 690
521 500	CD's	10,00	retail shop	5 215 000
522	events (entrance fee per visitor)	2,00		24 234
1 005	user training lessons (groups)	50,00		50 250
The total monetary value of the library's services (including additional services to those shown above) came up to € 26 102 020 in 2004; the budget was € 4 640 500, making the profit € 21 461 520 and the cost-benefit ratio **1:5.6**.				

10.4 Economic impact analysis

10.4.1 General

Economic impact is defined as the effect of a policy, programme, project, activity or event on the economy of a given area. It is usually measured in terms of changes in economic growth (output or value added) and associated changes in jobs (employment) and income (wages).

Economic impact analysis identifies the direct and also the indirect (multiplier) effects of library expenditure on economies, especially on the local economy. The library can be seen as a local employer and a purchaser of local goods and services or as attracting tourists and visitors.

10.4.2 Impact on economic life in the community or region

10.4.2.1 Purchase of goods and services

Libraries support the local or regional economy by:

— regularly buying media and materials for their tasks;

— placing orders for binding, conservation and preservation (microfilming, copying, digitization);

— spending funds on utility management (e.g. heat, light, water, sewage, or cleaning).

In addition, one-time capital expenditure such as new buildings and extensions, furniture and equipment can increase the library's influence on the local economy.

10.4.2.2 The library as local employer

The library has a direct economic impact on the local community by providing employment to a number of persons. Even if the library employees do not live locally, they will invest part of their salary in local businesses and thus contribute to the local economy.

10.4.2.3 Influence on the economics of the surroundings

The library can have an influence on the retail stores in its surroundings, as its users might act as walk-in customers. Libraries with rare collections or housed in famous buildings can attract tourists and visitors. Unique materials in libraries may cause researchers to stay near the library for some time.

The existence of a library in a specified location can also be seen as "soft" factor for locational development, adding to the attractiveness of culture and leisure pursuits and thus potentially influencing the choice of location of commercial enterprises, but it will normally not be possible to assess a direct economic impact.

Libraries can also contribute to the local economy by offering business information, especially for small commercial firms that cannot afford to subscribe to information such as standards databases.

10.4.3 Influence on the regional or national economy

Libraries can positively influence the skills and knowledge of their users and can have an impact on their academic or professional success, such as high employment rates after qualification. Higher information literacy in the population, quick and good qualifications can in their part have an impact not only on the local and regional, but even on the national economy.

10.4.4 Use of economic impact analysis

The economic impact of libraries is seldom substantial. It is therefore recommended to apply this methodology only in addition to the calculation of library value as described above, and only in the following cases:

— The library's renown attracts a high number of tourists or of visitors who stay overnight.

— The library obtains considerable grants and donations that materially expand its capacity for expenditure.

Annex A
(informative)

Examples of impact surveys

A.1 General

This annex shows first an example of a simple impact survey that with small variations may be used in public and academic libraries. The example is a prototype, based on experiences in various projects.

The survey shows a set of questions that have proved effective in impact surveys. The different situations, tasks and populations of libraries and the specific goals of an impact assessment project might require changes and/or additional questions. Especially the personal questions at the end of the survey should be adapted to the particular situation of the library.

The first part of the questionnaire deals with the frequency of library visits and the type of library use. These questions serve as background and allow a more differentiated evaluation of answers to the direct impact questions. The same applies to the personal questions at the end.

Libraries should consult their stakeholders, especially their host institutions and other relevant authorities, when deciding on the content of the survey.

The Annex shows second a survey designed for assessing the impact of a specific library service, i.e. health information offered via the library. Other such specific services might be the reference service, user training in information skills, or the library's reading-rooms.

A.2 General impact survey

A.2.1 Preface to the questionnaire

The survey should explain the purpose of the project to the participants. This could be done in the following way:

We want to know how important this library and its services are for your

— learning and research;

— profession;

— vocational training;

— further education;

— personal life and well-being.

Your answer can help us to model and develop even better services for you. Answers are voluntary and anonymous. Thank you for your cooperation.

A.2.2 Questions about the frequency of physical and virtual library visits

Question 1: On average, how often do you visit the library building (including branch libraries or mobile libraries)?

— daily;

— several times per week;

— several times per month;

— ca. once per month;

— less often;

— never;

— this is my first time.

Optional question for those answering "never":

Question 2: Why do you not visit the library building?

(Check more than one box, if applicable)

☐ long distance;

☐ no convenient transportation;

☐ opening hours not convenient;

☐ does not have material that I want;

☐ not enough material in my language;

☐ materials that I want always on loan;

☐ staff too busy to help me;

☐ not enough seats;

☐ too noisy;

☐ computers always in use when I want one;

☐ I have no time;

☐ I get the necessary information elsewhere;

☐ other (please explain).

Question 3: On average, how often do you use the library's online services via the Internet (e.g. electronic journals, online catalogue)?

— daily;

— several times per week;

— several times per month;

— ca. once per month;

— less often;

— never;

— this is my first time.

Optional question for those answering "never":

Question 4: Why do you not use the library's online services?

(Check more than one box, if applicable)

☐ too difficult to use;