

## **Academic library directors' use of statistical data - benchmarking tools for the libraries**

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**Abstract:** There has been an ongoing discussion about the input of the library to the output of their university. The challenge here seems to be that it is difficult to discern a clear correlation without in-depth research and analysis. Nonetheless, the libraries must prove their value to their parent organizations to take part in the continual survival game of academic resource allocation as well as competing with different actors for the dissemination of academic information. In this paper, we analyze how the statistical data is utilized in comparing the success of the universities, their output and in addition, the resources allocated to them and its use by the libraries. The comparison is made between five Finnish universities with similar sizes and academic structures. The main source of the data is interviews conducted with library managers.

**Keywords:** Universities, Academic libraries, Benchmarking, Output analysis, cost-effectiveness, Finland

### **1. Introduction - the request for the effectiveness of the academic libraries**

There is an ongoing discussion about the input of the libraries to the output of the universities (see Kiviniemi, Laitinen & Saarti 2009; Oakleaf 2010 and Dobbs 2017). It seems that it is difficult to discern a clear correlation without undertaking in-depth research and analysis of the long-term effects that libraries have for their users. On one hand, the libraries must prove their value to their parent organizations but on the other they need to participate in the "survival game" for allocation of academic resources as well as competing with different actors within the academic publishing arena (Düren & Landoy & Saarti 2017 and Saarti & Laitinen & Vattulainen 2017).

The rapid evolution of the libraries' operational environment has meant that the library statistics and their analysis may be lacking, both at the standard level and even in the everyday routines conducted by the libraries. The switch from printed to digital and the rapidly evolving open science practices have almost

totally altered the paradigms surrounding academic libraries during the past few decades (Saarti 2018).

At the same time, there has been a debate not only about what should be measured in the libraries but also why these measurements should be conducted. One can divide this discussion into the following phases (see e.g. Heaney 2009 and Brundy 2015):

- Resource, i.e. collection-based paradigm in the library statistics – 1980's
- Knowledge management paradigm, 1990 - 2010
- Innovation management paradigm, 2010 -

The collection-based paradigm had focused on the statistical information about the collection, other library resources and their use. The knowledge management paradigm changed the focus to the utility and access to the library's resources (the IFLA library statistics manifesto and its rhetoric (2010) are a good example of this shift). The rapid evolution of the dissemination of digital information had already influenced this development. Recently, the creation of the digital operational environment and the evolution of digital science has led the university libraries to assess their role in the innovation processes (see Crouzier et al. 2017, 11 – 12).

This paper will analyse the different types of data and instruments that are utilized in comparing the success of the universities, their output and in addition, the resources allocated and how that is used by the libraries. The comparison is made between five Finnish universities of similar sizes and academic structures. The main source of the data is interviews conducted with the library managers, statistical data of the universities as well as basic information about the libraries and their output. The aim is to determine how the needs of the library directors are met in terms of the current Finnish library statistics in the selected libraries as well as how this statistical data is utilized.

## **2. The development of the library statistics in Finland**

There are good possibilities to utilize statistical data in Finnish university libraries, since the library statistics in Finland stretch back at least to the year 1897 (*Statistisk årsbok för Helsingfors stad* 1908). Nonetheless, the early statistics were scant and rather haphazard as compared with today's requirements. The Finnish Library Association has published more detailed statistics of Finnish scientific libraries from 1955 to 1988 (*Kirjastolehti [Library Magazine]* 1955 - 1981, *Kirjastovuosisikirja [Annual Yearbook of Library]* 1982 – 1988).

The responsibility for co-ordination of the national science library statistics was undertaken in 1972 by the Finnish Council for Scientific Information and Research Libraries (TINFO), later the Finnish Council for Information

Provision that also published the statistics as handouts in 1983 - 1991. (TINFO 1983-1991). Since 1992, the National Library of Finland has been responsible for the maintenance of the national statistics of the scientific libraries of Finland. The printed statistics have been published for the period 1992 - 2001 (Libraries 1992-2001).

Since 2002, the national statistics of Finnish scientific libraries have been available as a public online database maintained by the National Library of Finland. The database is open for all interested parties through the Internet and it can freely be browsed without logging in using the two official languages of Finland (Finnish and Swedish) plus English (<https://yhteistilasto.lib.helsinki.fi/index.php?lang=en>).

Into this database, the annual statistics of Finnish scientific libraries are collected according to the standard ISO 2789:2013 / SFS-ISO 2789:2015. The present statistics of the scientific libraries give a general view of the resources, collections and services of Finnish scientific libraries. The statistics contain information about the Finnish university libraries, the libraries of the universities of applied sciences, the National Library of Finland as well as about some specialist libraries.

The traditional way of showing a library's results has been statistically oriented: the more you have - in terms of books, journals, premises, etc. - the better you are. This rhetoric is changing towards the need for effectiveness, cooperation and allocating resources to top-level research and to strategic focus areas. Today, it is not enough for the library simply to reveal how much resources it has access to or how they are used, one must also be able to show that this investment and the utilization of these resources achieve better results for both research and education in the university and that these services are being provided in an efficient manner.

Though library statistics are just one part of the “Big Picture”, they have a remarkable role in the production of the factual information needed as the basis for planning. This is why it is important for those working in the management of libraries to acquire the skill of understanding statistics. Delivering the annual statistics is a major effort for libraries, but after the statistics have been collated, the numbers are often forgotten. This “statistical illiteracy” of librarians is rather well known and for years there has been a discussion about how best they can develop their skills (Ambrožič 2003).

As stated, statistics describing the operation of libraries have been collected for more than one hundred years in Finland, and they have established their position as an important source of information. The annual statistics of the libraries of Finland are systematically collected in the joint-statistics of the libraries. There are two databases: the database for public libraries is the responsibility of the

Culture and Media Division of the Ministry of Education (Finnish Public Libraries Statistics 1999-2010), and the database for academic libraries is the responsibility of the National Library of Finland (Research Library Statistics Database of Finland 2002-2010).

Both the academic and public libraries of Finland have excellent statistics which contain a substantial amount of up-to-date information and a wide set of indicators related to the libraries. The indicators are automatically created from the system's statistical database.

The statistics are collected according to standard ISO 2789. The statistics of the scientific libraries provide a general view of the resources, collections and services of Finnish scientific libraries. The statistics from the year 2002 contain information about many libraries; the national library, the university libraries, the Polytechnic libraries and several specialist libraries,. The statistics of Finnish public libraries in the present format originate from the year 1999. The older statistics are available in printed format.

The information for the annual statistics is directly entered into the database in the libraries where the person in charge of statistics takes care of entering the information. Part of the information saved in the database is directly produced as a computer run from the library databases.

Essential key values describing the resources of the library, library use and library collections are produced on the basis of the statistical data in the statistics database with automatic computer calculation. Some of the indicators are based on the international standard ISO 11620, some have been developed for the needs of the Finnish scientific libraries themselves.

### **3. Methods and research questions**

An interview was conducted with the Finnish university library directors via a web form to collect the necessary data. It was estimated that more responses would be received in this way than by trying to reach directors by telephone or by meeting them personally.

The aim of this study was to determine answers to the following questions:

- how the library directors are utilizing KITT2 statistics (<https://yhteistilasto.lib.helsinki.fi/index.php?lang=en>)
- how are they monitoring the statistical evolution of their own library
- how are they utilizing statistic information in library operations or in benchmarking
- how would they like the KITT2 statistic to be developed

The invitation to participate in the survey was sent on 2nd February 2018 and the response time was until the 1st March 2018. The invitation was sent via an e-mail list of library directors. The invitation was sent to 15 directors and two

expert members. We received 9 responses to the questionnaire i.e. the response rate was 52.9%. The respondents spent an average of 8:39 minutes filling in the questionnaire. The names of the respondents were not asked during the survey.

The questions were non-structured because the idea was to obtain as open a response as possible without any guidance offered on how they should be answered. The goal was to collect new perspectives in an open manner about the use and opinions about the library statistics. Although some well thought out reflections were received, it was also noted that the open questions gave some of the respondents an easy way to answer rather briefly without providing a deeper analysis of their opinions and actions.

In the following chapter, these findings are discussed in depth along with a content analysis of the responses to the survey questions.

#### **4. Results – how the library directors utilize statistics**

*Question: Which statistical data from KITT2 do you follow?*

The most important statistical data followed by the directors were the financial figures, staff, and facilities, as well as the statistics about the usage, collections and resources allocated to the library. These were named by six out of nine respondents: “Key data in general, financial data, staff numbers, primarily, if necessary, just about everything, indicating how much money has been allocated and what has been done with it.”

Two respondents indicated that they did not regularly follow any statistical data. One respondent reported that he/she liked all the topics and even wanted more data to be analysed.

*Question: What does KITT2 not reveal and what other statistical data would you like to have?*

Two respondents estimated that the KITT2 statistics do not indicate the quality level of the services or their effectiveness, and they must use other instruments to evaluate these topics. There was also a need to know more about how much libraries have contact customer services or guidance and teaching, and how much these services cost in libraries. One of the respondents mentioned as a development proposal that there should be a rethinking of the current structure and content of the collection statistics.

The major needs for new types of statistics were for emerging services such as open science, self-archiving of publications, bibliometric analysis, and other research support services. Services like traditional information retrieval seem to

be changing towards guidance and research support and these facets are not incorporated into the present statistics. These facets were hoped for by five out of nine respondents. Existing statistics on using e-materials (journals, books, and databases) were also wanted in order that they should be more consistent. For example, is the statistical information about e-services that the libraries receive from the e-service providers actually reliable, because based on the respondents they seem to display substantial variations from year to year.

Two respondents were completely satisfied with the current statistics; one of the respondents gave more in-depth detailed needs i.e. the hope that they could acquire a "Quality Devil (i.e. person who is deeply interested in the improvement of the quality of the services)".

*Question: How do you utilize the information from KITT2?*

The respondents were mainly using statistical data to lobby the top management of their own university, especially when conducting funding negotiations. The designing and monitoring services were actually mentioned only in two responses, but perhaps it was implied by more of the respondents with their references to the funding negotiations. Only two respondents mentioned the use of data for comparison with other libraries and one other respondent also mentioned both nationwide and international follow-up.

*Question: Do you utilize any other statistics? What statistics?*

In addition to the KITT2, four of the nine respondents reported accessing another database: Vipunen, the national education sector statistics in Finland (<https://vipunen.fi/en-gb/>). Vipunen's statistics are based on data collected by the Statistics Finland, the Ministry of Culture and Education and the Finnish National Board of Education.

Statistics Finland collects the student data and data on qualifications and degrees attained during a calendar year. This data is submitted by education providers, educational institutions, and higher education institutions. Data is also gathered from municipalities on the costs and operations of the municipal comprehensive school education (basic education). This data is required for the determination of funding transfers by the central government to local government.

Based on the data it collects, Statistics Finland maintains a database for qualifications and degrees, which combines population information provided by the Population Register Centre and data from the employment register, also maintained by Statistics Finland.

The statistics of one's parent organization (i.e. the university) were monitored by five respondents. Similarly, five respondents reported accessing the following international databases, such as the EU, OECD, and Nordic statistics. Statistics

on publishing and education were also a topic of interest. One respondent also reported following the statistical database of the public libraries. One respondent did not use any statistics outside the aggregated statistics.

*Question: Do you benchmark statistics data with other libraries? With what kind of libraries?*

Six respondents compared the statistical data of similar libraries from their own reference group. One respondent made comparisons with all the library sectors and conducted comparisons within the sectors. Two respondents reported that they did not undertake any statistical comparisons.

<b>Impact</b>	<b>Evaluation</b>	<b>Management</b>
- lobbying, especially the University management	- national and international follow-up	- monitoring daily routines
- funding and other negotiations with the University	- benchmarking	-reporting and trend analysis
- presentations and papers		- service planning

**Fig. 1. The main categories of the KITT2 statistical database used**

### **5. Conclusions - towards a more multi-faceted evaluation**

It seems that the KITT2 statistics is an important tool for library directors in monitoring the key data related to the economy, staff, facilities, and library use. The current statistics database has its inherent limitations, e.g. it does not reveal the level and quality of the actual services and the effectiveness of the library’s activities must be analyzed in other ways.

The national statistics seem to be slow in responding to the changes happening due to the digitalization of the academic library services. For example, traditional collections are very accurately recorded, but the performance of new services is still not a part of data collation. For example, these new services include open science, parallel publishing repositories, and research support. Consistency within the statistical data was also hoped for, as an example, the case for collecting data on e-materials.

The library directors utilized the statistics mainly for negotiations with the university leadership - both in their support when undertaking funding negotiations and lobbying for resources. This survey does not answer the question of whether the directors interpret the library's output as part of the university's core processes or separately as the library's own result.

In addition to the KITT2 database, the library directors keep track of the statistics of their own organization, as well as the statistical services of the education administration's reporting portal, Vipunen (<https://vipunen.fi/en-gb/>). These include information on the amount of research publications and on education, specifically the numbers of graduate degrees. In addition, statistics are compared with international statistics, mainly in the Nordic and EU areas.

Nearly all respondents reported making statistical comparisons with the same size and type of university libraries. However, the survey did not answer what kind of benchmarking they were utilizing and how they use this information in their daily work. Only one respondent clarified that the function of their comparisons of statistics was to support economic and operational planning.

Thus there is definitely a need for the development and implementation of the existing library statistics. Furthermore, the library directors seem to need more tools so they can apply knowledge/fact-based approaches and innovation management. It also is evident that many library directors are not aware of the tools and standards already available to allow them to conduct this kind of statistical comparison i.e. benchmarking of their work. In summary, the greatest need seems to be the creation of new tools for compiling and analyzing collected (statistical) data from the existing different sources to help in the everyday management of the libraries.

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