PODUCTIVITY MANAGEMENT IN AN ACADEMIC LIBRARY: PERFORMANCE MEASUREMENT AT BILGI LIBRARY

VİLDAN ORANCI
102604086

İSTANBUL BİLGİ ÜNİVERSİTESİ
SOSYAL BİLİMLER ENSTİTÜSÜ
İŞLETME YÜKSEK LİSANS PROGRAMI

MURAT ALBAYRAKOĞLU

2005

ABSTRACT

This project is about how productivity management is done in academic libraries and applications of performance measurement at Istanbul Bilgi University Library. The definitions of productivity and performance measurement in service organizations are given in the first chapter. Then the definition, the mission and the goals of academic libraries are defined in second chapter. Also it was given information about Bilgi University library covering the collection, staff, the divisions and user profile. The third chapter covers the techniques of performance measurement. The aim of measurement, the methods of the measurement and the performance indicators are also mentioned in this chapter. The importance of performance indicators is also emphasized. Lastly, survey methods which are the one of the most important tools of performance measurement are discussed. In the next chapter, performance measurement of Bilgi library starts. First, the definition of performance indicators are given then it is explained how to be calculated through statistical data of Bilgi University library. The last chapter is consist of the explaining the results of the questionnaire for this project.

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

INTRODUCTION:

Today academic libraries all over the world recognize the need for effective management tools. Libraries like other service institutions have to show that they are using given resources for the right purpose and in the best way, that they are providing high quality services.

In this project, I tried to promote acceptance of performance measurement as an important tool for effective management for academic libraries. I tried to explain the importance of the productivity and how productivity be measured in service organizations.

According to Awuku (1995) Productivity is about change. It is about changing current management and work practices in all aspects of the global economy. Change, by its very nature, requires that difficult decisions have to be made. These may impact on technology, systems, management styles, capital, organizational culture, the bottom line and many other aspects of management. Workplaces must, as a result, be characterized by greater worker knowledge, skills, motivation and dignity.

This project tells the productivity measurement in academic libraries. So, why is it so important to measure the quality in the libraries? Abbott (1994, p.3) explains this as following:
In the harsher economic climate which exists today, where competition for resources is fierce, there is an increasing acceptance that libraries must demonstrate their value in measurable ways. Performance measurement, as it is currently understood, attempts to help library managers, and their parent institutions, to assess libraries according to the good they do- the effectiveness, cost-effectiveness, and efficiency of their services.

In this project, I tried to explain the productivity management in academic libraries and I tried to explain it through Bilgi University library. There exist many types of libraries in the world. If we talk about the productivity or performance measurement in academic libraries, we need to know what an academic library is. Third chapter covers the definition, mission and goals of an academic library. Then I explained academic libraries using Bilgi University Library as an example to define the terminologies such as objectives, collection,

staff, work flow, division of an academic library, etc. These information and statistical data given in chapter tree are used in measuring performance of Bilgi Library in chapter five.

Performance measurement is the one of the best way to understand the productivity of the organization. Fourth chapter covers the performance measurement techniques used in academic libraries. Before embarking on performance measurement, it is very important to understand the terminology. Therefore, I explained the concepts such as evaluation, assessment, input, outcomes, efficiency, effectiveness, cost-effectiveness, and performance measurement. Then I talked about methods and process of the measurement. Performance indicators are the one of the most important section of my project. Because performance indicators are the most effective tools measuring the effectiveness, efficiency and quality of a library. I created my performance indicators appropriate for Bilgi Library. Because there is no closed list for the indicators. Each library creates their own indicators according to their conditions. I tried to explain performance indicators through Bilgi Library and made measures for each performance indicator.

Fifth chapter of the project cover a user survey. It was distributed to 99 library users. In this chapter I studied the results of the survey.

2 PRODUCTIVITY

2.1 The Definition: First I would like give the traditional definition of productivity. *Productivity is the ratio of outputs (goods and services) divided by the inputs (resources such as labor and capital)*

Productivity measurement:

"The measurement of productivity can be quiet direct. Such is the case when productivity can be measured as labor-hours per ton of a specific type of steel as the energy necessary to generate a kilowatt of electricity. An example can be summarized in the following equation. Productivity = Units produced / Input used

The use of just one resource input to measure productivity, as shown above, is known as single factor productivity**.** However, a broader view of productivity is multifactor productivity, which includes all inputs (e.g., labor, material, energy, capital). Multifactor productivity is also known as total factor productivity. Multifactor productivity is calculated by combining the input units, as shown below:

Productivity = Output / Labor + material+energy+capital+miscellaneus" (Sahay, 2005 pp.13)

2.2 Productivity in Service Sector

According to the article of Sahay "it is observed that productivity measurement is more complex in service industries owing to the following inherent characteristics of services:
The intangibility of services precludes the stockpiling and counting of finished goods inventory.

Productivity measures the capability to meet demand not the sales. Consequently attempts to measure the output in terms of units sold in a shop, or meals served in a restaurant, mixes both a production measure and a demand measure in a way that makes it difficult to quantify. (Sahay, 2005)

Even if the traditional measures of productivity for service operations are considered, one question that still remains unanswered is: what should be measured as input and output respectively? (Sahay, 2005)

Drucker explains the importance of the need of another productivity revolution in knowledge and service work in his article. The countries achieving such productivity gains will dominate the next century economically. The key is the productivity revolution is working smarter. Working smarter requires five distinct steps. The first one is defining the task. It is important to know what the goal is and what will be done. The second step is concentrate on the task. Too much job enrichment takes the form of busywork, diverting employees from work that add value. The third step is defining the performance. For some jobs, performance means quality. For a second set of jobs, quality and quantity constitute performance. Finally, some jobs are production jobs, in which performance is largely defined by the quantity of work accomplishment and quality is a matter of external criteria. The fourth step is asking people who do the work that how they think improving their productivity. The fifth step is to build continuous learning into the organization. (Drucker 1991)

2.3. Productivity Measurement in a Service Organization

To measure productivity of a service sector we need to first understand the singularity of the service sector. This is very important to know what to measure, is it possible to measure, what techniques to use, and whether the measurements can be of any genuine assistance. The service sectors constitute the largest and fastest-growing segment of the economies of the world. It encompasses a wide range of areas including financial services, transportation, health care, retailing, education, BPOs, R&D, hospitality & tourism and consultancy services. (Sahay, 2005)

The main criteria of evaluation of a service operation should be based on both quantity and quality measures. According to Sahay the basic problems of measurement are stated as follows:

How can the quantity of inputs and outputs be measured?
How can the quality of inputs and outputs be measured?
How can the interrelationship of different output and input factors be operationalised?

It is suggested that the following requirements must be met to obtain a comprehensive measure of service productivity: the quantity and quality aspects of service productivity must be operationalised; the operationalisation must be implemented through a commensurable unit of measurement; and the possibility of cumulative effects has to be accounted for in the measurement effort. (Sahay, 2005)

3 ACADEMIC LIBRARIES AND ISTANBUL BILGI UNIVERSITY LIBRARY

3.1 Definition of Academic Libraries

According to report of National Center For Education Statistics, an academic library is defined as following: *An academic library is defined in the Instructions section of the survey form as an entity in a postsecondary institution that provides all of the following:*

- *An organized collection of printed or other materials, or a combination thereof.*
- *A staff trained to provide and interpret such materials as required to meet the Informational, cultural, recreational, or educational needs of clientele.*
- *An established schedule in which services of the staff are available to clientele.*
- *The physical facilities necessary to support such a collection, staff, and schedule.* (Tabbs, 2003)

3.1.1. The Mission

It is very important and necessary to define its mission for the library. The mission of an academic library is to select, collect, organize and provide access to information primarily for its own institution's users.

3.1.2 Goals

To provide all kind of information including print materials and audio visual materials such as DVD, video, software, etc. according to needs of primary group and the special functions of the library as promptly as possible.

To provide its users a catalog that are comprehensive, up-to-date, and easy to use and which can be consulted by a number of users simultaneously.

To provide access to material preferably in open stacks.

To provide opening hours those are consistent with reasonable demand.

To provide access for the main services of the library as free of charge.

To provide adequate space, facilities and equipment within the library.

To assist the users in usage of the print and electronic resources and give the adequate reference services. (Saur 1996, pp.13-14)

3.2 Istanbul Bilgi University Library

Istanbul Bilgi University Library was established in 1994 within Istanbul Bilgi University. There are two libraries at Kuştepe and Dolapdere campuses and the main library is at Kuştepe campus. Management policy, collection development, cataloging and all technical process are managed by Kuştepe Library. User orientation seminars are carried out in both libraries.

The total space of the library is 2,293 square meter. The seating capacity is 510.

3.2.1 Objective

Bilgi University Library's objective is to support teaching, learning and research activities providing all kinds of resources for the university degree programs.

2.2.2 The Collection

Bilgi Library collection consists of books, periodicals, e-books, e-journals, academic internet resources, audio-visual materials. Numbers of materials in the collection can be seen at Table 3.1. There are 71,408 items in Bilgi University library collection. Electronic books and journals, and electronic databases are not included. As shown at Table 3.1 82.97% of the collection is consist of the books. The rest is print journals and audiovisual materials.

Table 3.1 Number of Materials and Their Percentages in the Library Collection

Rate	Numbers	Percentage
Book	59,248	82,971%
Journal	3,614	5,061%
Thesis	269	0,377%
Diskette	225	0,315%
CDROM	879	1,231%
Music CD	1,638	2,294%
DVD	2,073	2,903%
VCD	119	0,167%
Sound cassette	86	0,120%
VHS	2,477	3,469%
Map	24	0,034%
Poster	20	0,028%
Score	704	0,986%
Screenplay	32	0,045%
Total	71,408	100%

3.2.3 Electronic Collection

Bilgi Library subscribes to 39 electronic databases and provides access to over 21,600 full text journals. Electronic books collection is consist of 20,400 titles.

Bilgi University is a social science based university. Because of it, the collection was developed based on the departments in the university.

57% of the materials are in English language, 39% is in Turkish and 4% is in other languages. 53,800 (75%) items are located in Kuştepe library and 17,608 (25%) items are in Dolapdere Library.

3.2.4 Librarians and Staff

There are 15 librarians and one system manager (automation system manager) working at Bilgi University Library. The main library is Kuştepe Library. There is a branch library in Dolapdere Campus. There are 42 working students.

Director	1 full time
Assistant director (Dolapdere Library)	1 full time
Collection development	1 full time
Cataloging and classification	3 full time
Reference Information and user services (Kuştepe Library)	4 full time
Reference Information and user services (Dolapdere Library)	2 full time
Serials and E-resources	2 full time
Automation manager	1 full time

Figure 3.1 Bilgi Library Staff

3.2.5 Organization

As you can see at Figure 3.2 Kuştepe and Dolapdere libraries both report to the head librarian. Dolapdere Library director is assistant director for both libraries. Whole technical process is carried out in Kuştepe library. There is only reference service is given in Dolapdere library.

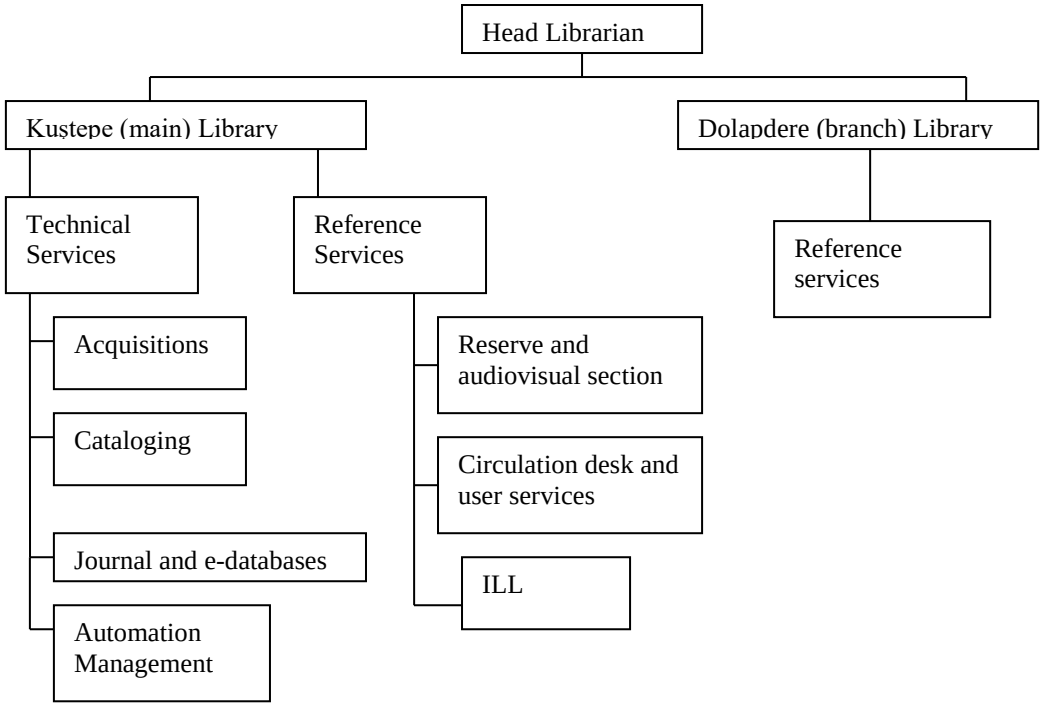
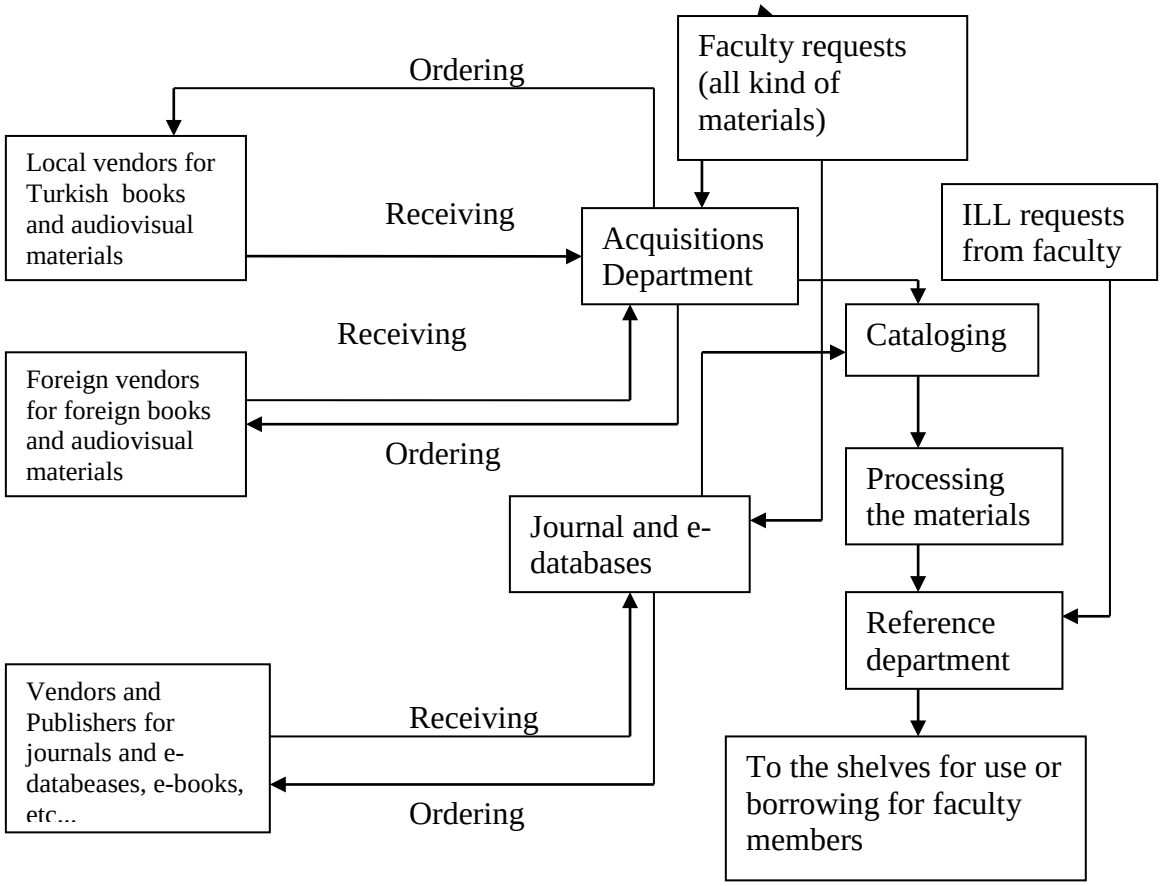


Figure 3.2 Bilgi Library Organization Chart

3.2.6 Work Flow

Work flow in Bilgi University library begins with delivering the book and journal orders from the faculty members. After ordering and receiving process, materials are sent to the Cataloging department for technical process. After completing the process, materials are ready for the library users. The more specific information is given under library divisions section.

Table 3.2 Bilgi Library Work Flow



3.2.7 Divisions of Bilgi University Library

Bilgi University Library services are divided into two main sections which are technical services and reference services. Technical services division is consist of Acquisitions Department, Cataloging Department and Serials Department.

3.2.7.1 Acquisitions Department

The aim of Bilgi University acquisitions department is to support the library and university mission statements by acquiring library materials and electronic resources to provide core materials for the university's undergraduate and graduate programs, and to provide comprehensive support for student and faculty research, scholarship, and creative activities. The library purchases the resources in all format types, books, periodicals, serials, music scores, DVDs, videos, electronic resources, computer files, etc.

Innovative automation system acquisitions module has been using in this department since year 2001. All kinds of materials are ordered using Innovative automation system and they have processed after having received them.

As you can see at Table 3.4 materials are sent to the cataloging department after being acquired and processed by acquisitions department.

Currently one librarian is working in acquisitions department.

3.2.7.2 Cataloging Department

The Cataloging Department is responsible for the cataloging, classification, and subject analysis of library materials in all formats. All of the resources are classified using the LCC [1]classification system. The Millennium automation system is also used in cataloging department and it enables the bibliographic records in LCC system to be downloaded into the local system.

Three librarians are currently working in cataloging department.

3.2.7.3 Serials Department

Bilgi University serials department is responsible for the provision of the Library's serial publications and databases in all subject areas, formats, and languages. The department also creates and maintains online access to the electronic resources on campus and off campus.

Serial resources include academic print journals, newspapers, electronic databases and other continuing titles. The Department is responsible for the acquisition, processing and binding of these materials, whether they are donated or are purchased by subscription. This

[1] *A system of classifying books and other library materials developed and maintained over the last 200 years by the Library of Congress in Washington, D.C. In LCC, human knowledge is divided into 20 broad categories indicated by single letters of the roman alphabet, with major subdivisions indicated by a second letter, and narrower subdivisions by decimal numbers and further alphabetic notation.* (ODLIS)

process includes ordering, receipt, claiming and reporting of detailed information through the Millennium Library Automation System.

Serials department is also responsible to send the each complete volume of a serial title to the bindery to be bound into a hardbound volume. It is called Bound Journals Collection.

3.2.7.4 Reference Services

Basic Reference Services are provided both Kuştepe and Dolapdere libraries during the hours that the library is open. Assistance in both libraries is provided to walk-in patrons, via email and telephone. User orientation programs are arranged by reference librarians. All foundation classes join the orientation programs in the first year of the university. In order to benefit from the library properly they first need to know to use the library.

Opac: *An acronym for **O**nline **P**ublic **A**ccess **C**atalog, a database composed of bibliographic records describing the books and other materials owned by a library or library system, accessible via public terminals or workstations usually concentrated near the reference desk to make it easy for users to request the assistance of a trained reference librarian. Most online catalogs are searchable by author, title, subject, and keywords and allow users to print, download, or export records to an e-mail account.* (ODLIS) Opac is very important for the libraries and it is used in Bilgi Library reference service.

3.2.7.5 Interlibrary loan (ILL)

When a book or other item needed by a registered borrower is checked out, unavailable for some other reason, or not owned by the library, a patron may request that it be borrowed from another library by filling out a printed interlibrary loan request form at a service desk, or electronically via the library's Web site (ODLIS) In Bilgi University Library, ILL are carried out by Reference department.

3.2.7.6 Library Automation

Libraries existed for centuries without automation. But as technology emerged in the world at large, libraries embraced these tools as a means to avoid some of the menial tasks inherent to managing large collections. When early business machines, tabulators, and early computers came on the scene, batch-oriented punch card systems were put to good use in libraries for automated circulation, catalog card production, and book acquisitions. Later, online integrated library systems replaced the batch-oriented systems. (Breeding, 1999)

The design and implementation of ever more sophisticated computer systems to accomplish tasks originally done by hand in libraries. Beginning in the 1960s with the development of the machine-readable catalog record (MARC), the process of automation has expanded to include the core functions of acquisitions, cataloging and authority control, serials control, circulation and inventory, and interlibrary loan and document delivery. The library automation field is currently dominated by a handful of systems vendors (Auto-Graphics, Brodart, Dynix, Endeavor, EOS International, Ex Libris, Follett, GIS Information Systems, Innovative Interfaces, Sirsi, TLC, and VTLS). (ODLIS)

Innovative Interfaces: Istanbul Bilgi University Library has been using this system since the year 2000. Innovative Interfaces offers by far the most complete array of reliable, flexible, and user-friendly features. It enables libraries to use data and the network more efficiently, allowing for easy adjustment to changing technology. Bilgi University library has been using “millennium” version of Innovative system.

An automation manager manages the system which consists of hardware, software and users. Automation manager's mission is to keep the system up and running by controlling, modifying, customizing the hardware and software components. Also trains and helps users, prepares reports, follows the new developments. He/she also upgrades the software and installs new ones. Currently one automation manager is working in Bilgi University Library.

3.2.8 User Profile

As shown at Table 3.3 Bilgi library does not only serve its own members, the library also welcomes to the other university members. 1.4% of the users is consist of other university members.

Table 3.3 User profile of Bilgi University Library

User type	Numbers	Percentage
Undergraduates	5,827	66.5%
Master Students	1,663	19.0%
Academic staff -full time	473	5.4%
Administrative staff	329	3.8%
Academic staff - part time	200	2.3%
Other University Members	126	1.4%
Alumni	77	0.9%
Other Libraries/ILL	46	0.5%
PhD Students	21	0.2%
Total	8,762	100%

4 MEASURING TECHNIQUES FOR ACADEMIC LIBRARIES

4.1 Aim of Measurement

Today's academic libraries need to utilize effective management tools. Automation, dwindling resources, a growing demand for accountability as well as urge for better public relations have led academic libraries to use new management methods. One of these methods is performance measurement. (Boekhorst 1995)

4.2 The Terminology

I would like to explain the concepts which I will use in my project.

Evaluation: *a systematic process which assesses the efficiency and effectiveness of certain activities and offers a value judgment of their value in terms of some criteria (such as goals and objectives)* (McClure, 1985 pp.195)

Assessment: *The term tends to be used in the UK, whereas the term "evaluation" would be used in the US. For the purposes of judging the performance of academic libraries and for convenience sake in this book both terms may be deemed as synonymous. Indeed, "assess" is included in the (Concise Oxford) dictionary definition of "evaluate". (Morgan, 1995 pp.4)*

Inputs: The inputs consist of financial resources, staff, materials, collections book and periodicals, electronic databases and other physical plant. *Such inputs would not be evaluated per se but in terms of the role played by them in the library context. For example, the library's collection (input) would be evaluated in terms of satisfying the demands placed upon it (output) These items are tangible and easily quantifiable in terms of costs and numbers. (Morgan, 1995 pp.5)*

Output: The outputs from an academic library represent the services provided by that library. (Morgan, 1995 pp.5)

Outcomes: Outcomes are the uses made by the consumer of a given output and degree of satisfaction felt with those outputs (Abbott, 1994 p.16) *For example, provision of an enquiry service represents one output from an academic library; for a particular user the outcome of a reference enquiry would be the successful retrieval of a name, address, telephone number from which to obtain vital information for an assignment*. (Powell, 1992)

Efficiency: It is the relationship between the outputs of the library and the resources required to provide them. It is the ratio of input to output. The smaller the ratio, the more output for input and the more efficient library. One example of the efficiency indicator is the cost per loan and documents delivered per FTE[2] number of library staff (Morgan, 1995 pp.6)

Effectiveness: It is an outward-looking measure (as opposed to efficiency which is more an inward-looking measure). It is more like the measurement of the satisfaction levels of users with elements of the service or the service as a whole. (Morgan, 1995 pp.6)

Cost-effectiveness: It is an indicator showing the costs to the library of achieving its aims and objectives. For example, cost per document supplied, cost per study hour, cost per information unit supplied. (Morgan, 1995 p.7) The relationship between these concepts can be seen at Figure 4.1

[2] *full-time equivalent (FTE)*
A measure of the total number of students, undergraduate and graduate, enrolled for the number of credit hours considered by an institution of higher learning to be a full schedule, sometimes used by vendors to determine subscription rates charged on a sliding scale for access to electronic resources such as bibliographic databases. In the United States, there is no national standard for computing FTE--each institution has devised its own formula. A typical example: FTE = total number of undergraduate credit hours divided by 15, plus total number of graduate credit hours divided by 12. (ODLIS)

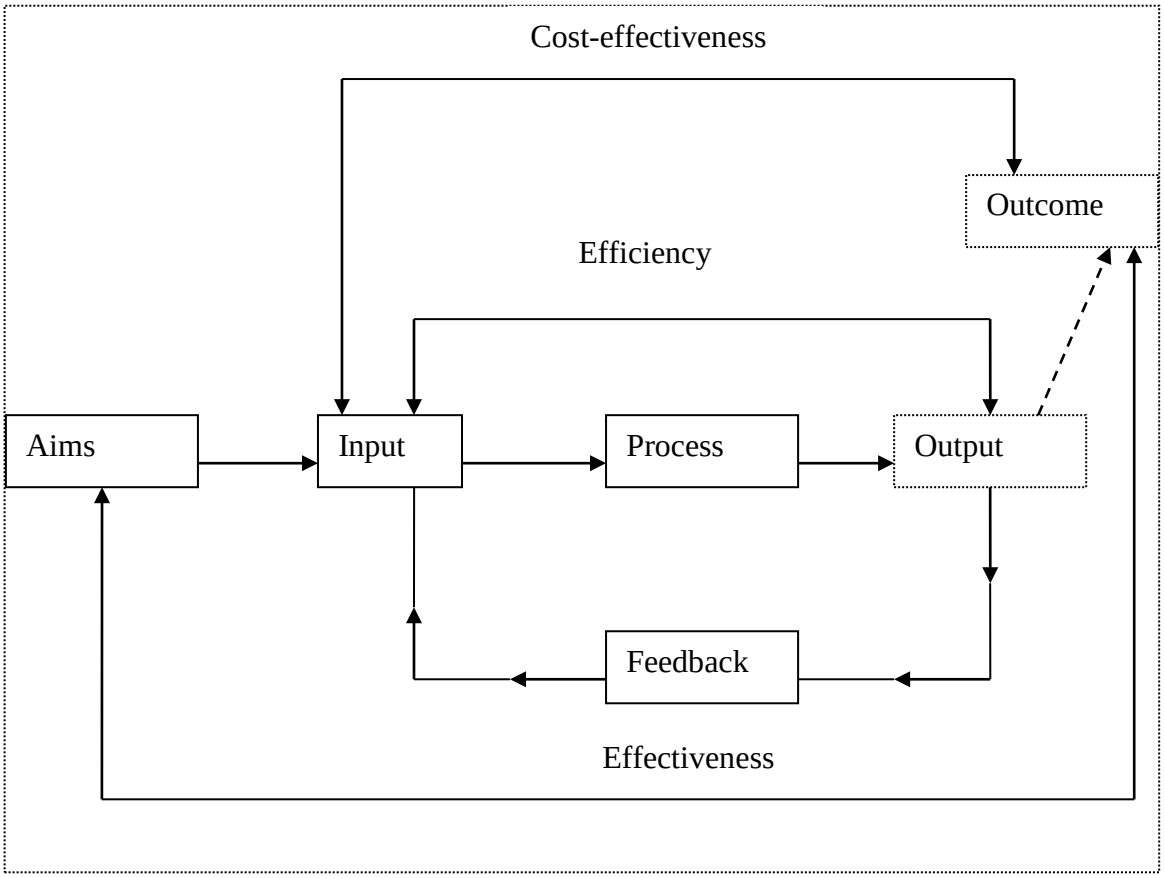


Figure 4.1 Systems Model of Performance Assessment (Morgan 1995, pp.3)

4.3 Performance Assessment

Performance assessment is simply a way of helping us to find out how good or bad service provided. It related performance to objectives. The service may be assessed in relation to itself, called a time series (for example, how effective was the reference services this year compared with last year). It may be made with other similar services (for example, the library spends per student among branch libraries (Morgan, 1995 pp.2)

4.4 Performance Measurement

In the library, it is very difficult (though not impossible), to measure productivity improvement principally because the library is not a factory-type enterprise but a service organization. (Awuku, 1995) According to Saur Performance measurement means collection of statistical and other data describing the performance of the library, and the analysis of these data in order to evaluate the performance. Or, in other words: comparing

what a library is doing (performance) with what it is meant to do (mission) and wants to achieve (goals) (Saur 1996, pp.16)

Another description comes from Dalton. According to Dalton (1988, p.31*) performance measurement is precise and quantifiable indicators which serve as a gauge for overall performance of a service, that is, the measures identify the amount of services (quantity) and their level of effectiveness (quality)*

It is very important to define the missions and the goals for and academic library before embarking on the measurement. (Boekhorst 1995) says that *if you don't know where you are going you will probably not wind up there.* That is why performance measurement is defined as "comparing what a library is doing (performance) with what it is meant to do (mission) and wants to achieve. (Boekhorst 1995)

Comparing results of performance measurement with goals and objectives will not only result in organizational measures for better performance, but will often lead to re-formulation and specification of goals and objectives (see figure 4.2)

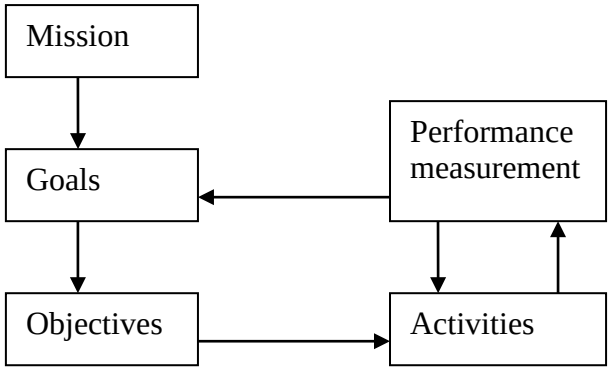


Figure 4.2 The Relationship Between Mission, Goals and Performance Measurement (Saur 1996, pp.17)

4.5 Methods of the Assessment

There is not one methodological technique of measuring performance of a library since there is no one single criterion for assessing performance. Different methods may be appropriate for different aspects. (Morgan, 1995 pp.9)

There are two main methods for the evaluation of a library's effectiveness of the measurement of its performance. Therese are subjective and the objective methods. Subjective method or approach primarily depends on users' opinions or attitudes to measure the effectiveness of a library. Normally, such opinions or attitudes are ascertained by methods used in marketing research, which are basically the use of questionnaire or interviews or both. As a result the subjective approach takes the user as the unit of analysis. (Alemna, 1999)

For a complete and objective evaluation of a library's effectiveness, the followings are very important and need to be done.

1- To be more specific for the goal of the systems and the parts studied.

2- To select the measure or measures reflecting this purpose or goal and specification of the units measure.

3- To be more specific for construction of measuring instruments and the implementation of a measuring method. (Alemna, 1999)

4.6 Performance Measurement and Statistics

There is a special relationship between performance measurement and library statistics. The evident of it is in the definition. "Collection of statistical and other data describing the performance of the library, and the analysis of this data in order to evaluate the performance" is meaning of the relationship between Performance measurement and statistics. According to Margaret Henty there is a wide gap between the types of statistics collected by most librarians and the data required to derive indicators of performance. (Henty, 1989). Three reasons are responsible for this gap: (Boekhorst 1995)

Quantity-versus-Quality. Statistics prepared by librarians can produce a lot of information about quantity; about things can be easily measured. Many librarians produce these kinds of statistics but very little is produced as regards the qualitative aspects, because the measurement process is more complicated and more time-consuming. (Boekhorst 1995)

Indicative Value. Generally traditional library statistics give limited data. They measure for example circulation, users, volumes, or opening hours but not non-user, the part of the collection not used or the missing volumes on the shelves. It is kind of success story. However, performance measurement also records failure. Furthermore, performance measurement adds "subjective" data, especially users' opinion on services, to "objective" data. (Boekhorst 1995)

Isolation. Performance measurement compares the data and combines them

- Circulation per group of undergraduates;
- Circulation of a subject collection compared to acquisitions (funds, volumes) in that same area.

In addition to this performance measurement evaluates the data by comparing it to the goals of the library. By this way, the library management learns to know whether the state of performance is "good" or "bad" and whether the library works effectively or not. (Boekhorst 1995)

4.7. The Process of Performance Measurement

It is very important to determine the performance indicators before embarking on measurement process.

According to IFLA Guidelines for Performance Measurement in Academic Libraries, there is one set of indicators, but this must not be regarded as a closed list. Academic libraries in all over the world show great varieties in organizational, financial, and technical conditions. Local circumstances will often make it necessary to modify the process of measuring, and not every indicator in the IFLA guideline will apply to every library. New

indicators might be added. That a library makes use of all indicators will be the exception rather than the rule. (Boekhorst 1995)

4.8. Performance Indicators

They are simply, management tools designed to assist library managers to determine how well their service is performing. They provide evidence on which to base judgments, but not substitutes for that judgment, since performance data since to be interpreted before such assessments can be made. In considering performance indicators we are rarely dealing with *absolutes* (Abbott 1994 pp.2)

Before embarking on performance measurement, library managers should be able to know and understand the mission and objectives of their institution. Also a library manager should answer the following questions.

-What business is he/she in?

-What is he/she trying to achieve?

-What are the objectives?

-Within what constraints does he/she operate?

-How will he/she judge (or be judged) on his/her success, or otherwise?

-How is the libraries department (or library) structured?

-How is management control exercised?

-Who are his/her customers/users and what services do they require? (Aboott 1994, 12-13)

To derive maximum benefit form the development of performance indicators they should be firmly rooted within a strategic management and planning framework, as illustrated in Figure 4.4. In this model, performance indicators emerge from the definition of strategic objectives, and the results of performance measurement influence further strategic planning and strategic decisions (Abbott, 1994 p.10)

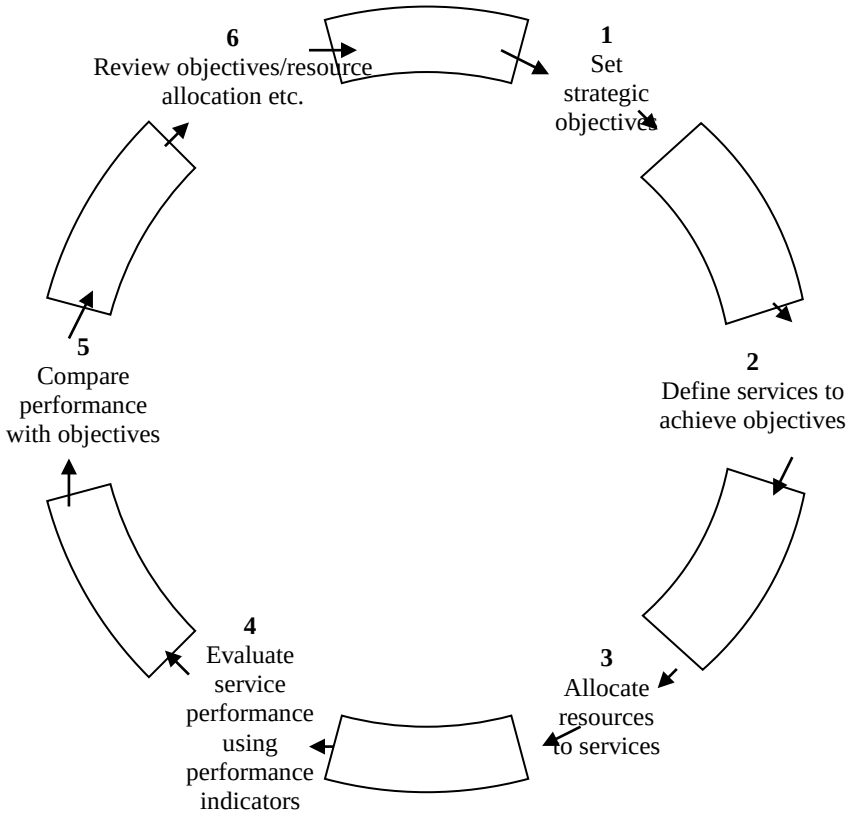


Figure 4.4 Performance Indicators in the Planning Cycle (Abbott 1994 p.10)

4.8.1 Criteria for Performance Indicators

Relevance: The indicator must be appropriate for what is supposed to measure. It is very important that the performance indicator should answer the particular question and answer should provide the particular result.

Helpfulness: The indicator must be informative and show the potential problems. (Abbott 1994 pp.26-27)

Validity: It should be reproducible and it must be measure the same things in the same way. (Abbott 1994 pp.26-27)

Reliability: The indicator must be accurate and it must not contain flaws which will invalidate it. (Abbott 1994 pp.26-27)

Practicality: The indicators should be user friendly in terms of cost of collection, both for library staff and for users. (Abbott 1994 pp.26-27)

4.8.2 List of Performance Indicators

IFLA[3] guideline chose 14 indicators after evaluating the existing literature on performance measurement. (Boekhorst 1996) As I mentioned above, these indicators can change according to libraries' various conditions. The list of performance indicators are as follows: (Boekhorst, 1996)

1 General Library Use and Facilities: (IFLA Guideline)

a- Market penetration

b- Ratio of users to primary user group

c- Ratio of users of certain groups (e.g. undergraduates) to total group

d- Opening hours compared to demand

e- Remote use

f- Number of remote uses in relation to primary user group

2 Collection Quality

a- Expert checklist (percent of items in the collection as listed in checklists and bibliographies)

b- Collection use

c- Lending collection

d- In-house stock not used within a certain period of time

e- Subject collections

f- Subject collections acquired recently

3 Catalogue Quality

a- Known-item search

[3] *International Federation of Library Associations and Institutions (IFLA)*
An independent international nongovernmental association of library associations, libraries and related institutions, sponsors, and individuals, IFLA was founded in 1927 by 15 countries as the International Library and Bibliographical Committee to promote global cooperation, communication, and research in library science and librarianship. With association and institutional members in over 130 countries, IFLA has a democratic structure in which a general assembly of members (the Council) is the highest governing organ. The organization maintains a Secretariat headed by a Secretary-General in The Hague and sponsors an annual conference, the World Library and Information Congress, in a different member country each year.(ODLIS)

b- Subject search

4 Availability of items in the collection

a- Acquisition Speed

b- Book processing speed

c- Availability

d- Document Delivery time

e- Interlibrary Loan speed

Reference Service

a- Reference fill rate

User Satisfaction

a- User satisfaction

b- With total service

c- With separate services

4.9 Survey Methods

Within the social sciences there exists a bewildering array of methodological advice about the most appropriate means of collecting, analyzing and interpreting data. A number of such research methods are applicable in librarianship and information studies. The most widely applied methods for evaluation of library services involve the use of surveys of one kind or another. Generally the aim of surveys is to find out factual, behavioral or attitudinal information. (Morgan, 1995 pp.136-137)

4.9.1 Questionnaires

In order to help in deciding whether to use a questionnaire survey, it would be very useful to determine the advantages and disadvantages of this method.

Advantages: According to Morgan (1995, pp.141) advantages of this method are listed below:

Ability to reach large sample numbers

Fixed format provides consistency of questioning

Provides for anonymity

Its construction should allow for ease of analysis of quantitative data

Relatively short time span

May allow respondents to reply in own time

Respondents likely to be more critical than face to face

Disadvantages: According to Morgan (1995, pp.141) disadvantages of this method are listed below:

Inadequacy in terms of complex or casual issues

Little contact between researcher and respondent

Potential for antagonism

Difficulty in obtaining responses from a representative cross-section

Variable response rate

4.9.2. Questionnaire Design

Oppenheim (1992, pp.100) is able to provide the essence of the questionnaire in the following extract:

A questionnaire is not some sort of official form, nor is it a set of questions which have been casually jotted down without much thought. We should think of the questionnaire as an important instrument of research, a tool for data collection. The questionnaire has a job to do: its function is measurement.

The user forms must be designed to ask questions clearly and unambiguously. Designing comprehensive, clear questionnaires is difficult. They must be tested, revised, retested and re-revised in a large number of libraries with a variety of users. Users are very resistant to lengthy questionnaires. It is better to do several short questionnaires at different times than one long questionnaire. (Van House 1989 pp.26)

Designing a questionnaire is a delicate balancing act which endeavors to:

- Avoid excessive length (leading to non-response or respondent fatigue)
- Include all the relevant questions
- Include enough white space so that the questionnaire can breathe

- Include questions of interest to encourage further participation
- Ensure consistency of instructions, for example ticking, circling etc. (Morgan 1995 pp.143)

4.9.3 Sampling

Unless a particular survey is to include all possible elements, then a sample needs to be drawn. A sample is a subset which represents a larger group or target population. There are 4 main sampling techniques. (Morgan, 1995 p.151)

- **Simple random sample:** This involves the random selection of the desired number form the sampling frame, for example the complete list of books, students, interlibrary loan requests etc. (Morgan, 1995 pp.152)

- **Systematic sampling:** This involves selecting a starting point in the sampling frame and then each *n*th item or person (Morgan, 1995 pp.152)

- **Stratified Random sampling:** This involves dividing the sampling frame into different strata, for example books in a classification scheme or library users by faculty or department. For example a satisfaction survey dealing with library opening hours which aims to represent the total library user population may require its sample to be divided proportionately between academic staff, full time students, part time students, access/franchise students, etc In this example concern about those who do not make use of the library service is an important but separate issue. (Morgan, 1995 pp.153)

- **Convenience (or accidental) sampling:** This involves the sample items being chosen at the convenience of the person drawing the sample.

5 PERFORMANCE INDICATORS AND BILGI LIBRARY

5.1 Facilities and Library Use

The indicators under the facilities and library uses measure the use of physical facilities such as numbers of people entering the library building the availability of specific facilities, and the use of library services. However, in recent years technology has made it possible for users to substitute electronic communications media for a visit to the library. In order to use the library, users do not have to come to the library anymore. Remote use of library often enhances the quality of service by making the library more convenient, even making accessible to users for whom it was inaccessible before (Van House 1990, p.77)

5.1.1 Ratio of Reference Transactions to Attendance

Attendance: It simply measures the number of users entering the library. Today many libraries use door counters.[4] This indicator can be used with the circulation transactions. In Bilgi University Library, attendance was 540,707 people last year. During this year the circulation transaction was 134,043

540,707/134,043= 4 about one in four visits (not users) resulted in a transaction.
Furthermore, on the average each registered user visits the library 540,707 / 8,762 = 61.7 times a year. 24% of these visits resulted in a transaction per user.

5.1.2 Attendance per Hour Open

It is the ration of people who enter the library per the library's open hours. Through the library automation system I calculated 2,948 open hours during one year and the attendance is 540,707.

[4] Door count: The number of times a mechanical counting device, located at the entrance to or exit from a library, is automatically activated whenever a person enters or leaves during a designated period of time (day, week, month, year), an important measure of library use. (ODLIS)

540,707/2,948= 183,4 hour per person
We can calculate this per day. 2,948 hours makes 122 open days.

183,4/122= 1.5 hours

5.1.3 Attendance per Staff FTE

This indicator measures the ratio of attendance per staff FTE. Staff FTE means that the total library staff. The attendance is 540,707 and the total staff FTE is 15 in Bilgi University library.

540,707/15 = 36,000 the ratio of attendance per staff FTE is approximately is 36,000 people.

5.1.4 Ratio of Circulation to Registered User

It indicates the approximate circulation per library user. The annual circulation Bilgi Library is 134,043. The number of registered users is 8,762.

134,043/8,762 = 15.2 times per library user

5.1.5 Delivering Speed

It measures the time period between the days the library orders and the day it arrives in the library. This indicator measures the vendor quickness in delivering the ordered documents. (Saur 1996, p. 77) This indicator also helps to evaluate the performance of the vendor by analyzing the delivering speed.

I used this performance indicator in order to calculate the average delivering speed in Bilgi Library acquisition department. I have chosen Blackwell's company which is a vendor who supplies 71.68% of the foreign books of the library.

After choosing Blackwell's firm, I made a list covering the titles received the dates between 1st of January 2004 and 1st of January 2005. There are 1,436 titles. Table 5.1 shows that quickness of Blackwell's company in delivering the titles.

Table 5.1 Delivering speed of Blackwell's Company

The Days	Number of orders	Percentage
16-30 days	278	19%
30-40 days	348	24.23%
40-50 days	266	18.52%
50-60 days	174	13.13%
60-90 days	180	12.12%
90-120 days	84	12.53%
120-150 days	31	5.85%
150 days and more	75	2.16%
Total	1,436	100%

This method can be used to compare the vendors according to their supplying speed. It is important to recognize that there are other criteria to evaluate the vendors such as discount rates, success to supply etc.

5.2 Materials Availability and Use

The indicators under this section shows how the library meets its users' needs for materials depends on a number of factors, including how well the collection is matched to users' needs, the library's efforts to make the collection accessible, and the users' efforts and ability to locate the materials needed. (Van House, 1990 pp.54)

It is very easy to measure the borrowing materials by automation systems in the library. It also provides detailed information about circulation by user group or by segments of the collection.

5.2.1 Rate of Collection per User

This indicator shows that the number of materials in the collection per library user. Bilgi Library print collection number is 71,408 and the number of total registered library users is 8,762

71,408/8,762 = 8.14 items per registered library user.

This indicator can be calculated by user segments and various library materials such as electronic collection, DVD collection, etc.

5.2.2 Reference Transactions per Circulation

The annual total number of items charged out for use, usually outside the library, includes initial charges, renewals and general collection and reserves. (Van House 1990 p.54) Renewals are part of circulation. It means that changing the materials' due date before the expiry date.

According to Van House (1990, p.55) there are many ways to measure the circulation. These are;

A- Calculating circulation per capita by dividing circulation by the number of people in the library primary user group.

B- Counting the circulation for each class of users or calculating the circulations per person in each class of users.

C- Calculating circulation for specific parts of the collection such as type of materials.

D- Dividing circulation per hours open to get circulation per hour.

E- Recording circulation by day of week, time of day, or week of academic term in order to find the heaviest use period.

In Bilgi Library:

A- According to Library Annual Report 2004, the number of registered users is 7,881. Total circulation is 134,043. 134,043/7,881 = 17 is the average circulation per a registered library user.

B- Bilgi Library average circulation statistics by user class is shown at Table 5.2. According to the table below the academic staff is the type of user class that uses the library most frequently.

Table 5.2 Average Circulation Transaction by User Class

User Class	Registered Users	Total check-outs	Average
Academic - Full Time	465	26,179	56.30%
Graduate	857	16,459	19.20%
Academic - Part Time	195	3,460	17.70%
Student	5,302	83,583	15.80%
Administrative Staff	311	2,879	9.30%
Other Libraries (ILL)	45	388	8.60%
Alumni	48	407	8.50%
Guest/Visitor	63	355	5.60%
EMBA	595	333	0.60%
Total	7,881	134,043	17%

C- Bilgi Library average circulation statistics according to material type is shown at Table 5.2. According to this statistics the majority use of the collection is consist of the books (72.46%)

Table 5.3 Average Circulation Transactions by Material Type

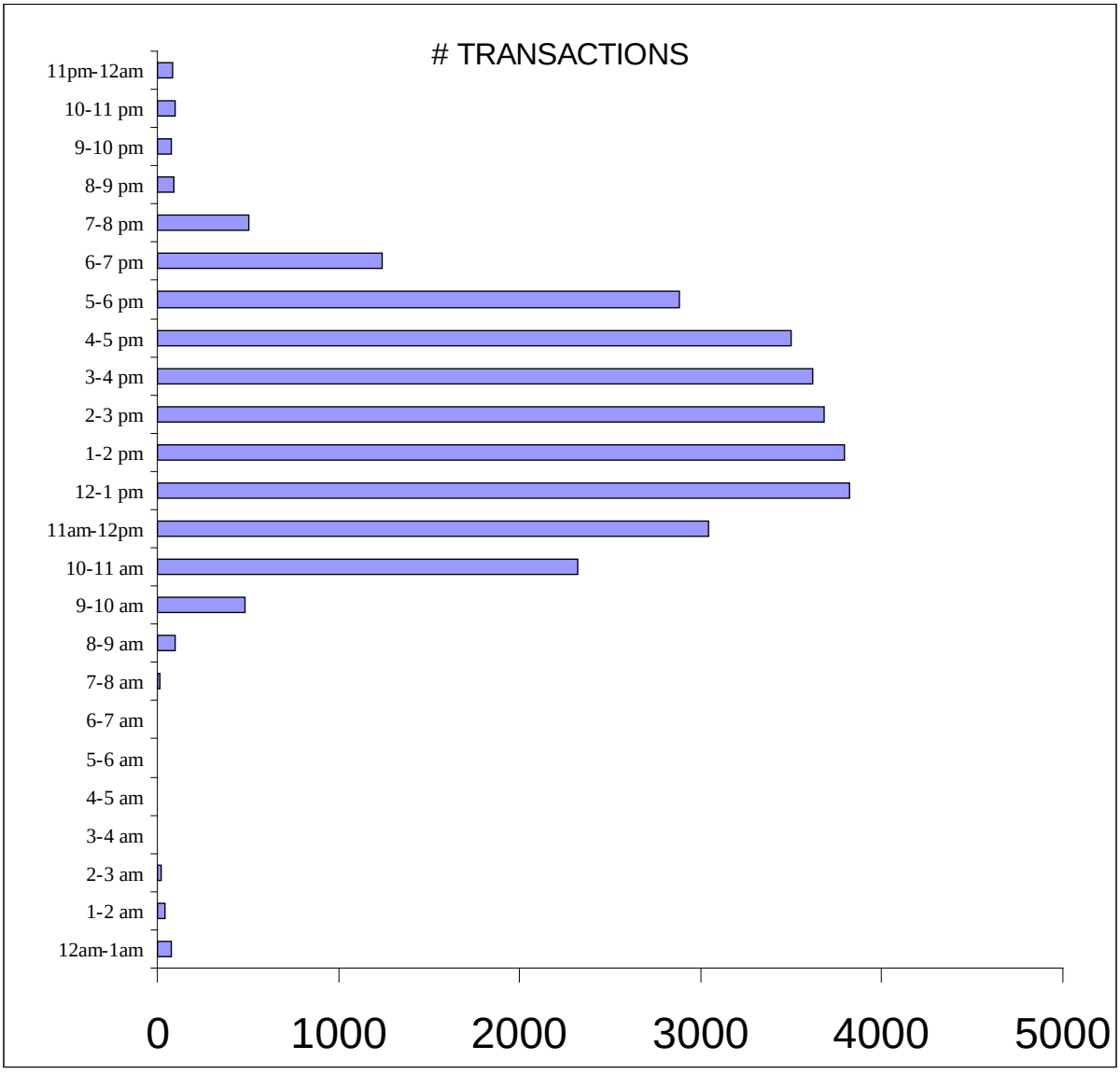
Material type	Number of check-outs	Percentage
Book	97,128	72.46%
DVD	20,409	15.23%
Headphones	6,203	4.63%
Video cassette	3,569	2.66%
Music CD	2,113	1.58%
Bound Journal	1,403	1.05%
Thesis	810	0.60%
Score	739	0.55%
CD ROM	615	0.46%
Other	1,054	0.79%
Total	134,043	100%

D- The total circulation can be easily measured by Library Automation system. The number was 1,231 for one day. Library was open the hours between 9.00 a.m. and

8.00 p.m. It makes 11 hours. According to formula; 1,231/11= 111,9 circulation per hour.

E- The heaviest use period also can be easily measured by library automation system. The system provides daily, weekly, monthly statistics showing the circulation. I made last semester's statistics including the months from September to February. The statistics can be seen at Table 5.4. The busiest time of the day is between the hour 12.00 pm and 1.00 p.m. The night transactions are the renewals. Because renewals are the part of the circulation.

Table 5.4 All Circulation Transactions by Hour During Year 2004



5.2.3 Overdues per Circulation

This indicator determines the rate of overdue items in total circulation. Circulation number in Month April was 11,925 in Bilgi Library. Number of overdues was 105 for the same month.

11,925/105x100= 11.35% of the circulation is consist of overdues for the month April. This can be done by years.

5.2.4 Circulation per Volume in Collection (Circulation Divided by Collection Size)

Total number of items in Bilgi Library is 73,332. The annual circulation is 134,043.
134,043/73,332 = 1.82

5.2.5 Circulation per Staff FTE

This indicator shows that one circulation transaction per one staff FTE.
Staff FTE in Bilgi University library is 15. 134.043/15 = 8,936 circulation transaction per one staff FTE for last year.

5.2.6 Circulation per Public Staff FTE

This indicator shows that one circulation transaction per one public staff FTE

Public Staff FTE in Bilgi University library is 6. 134,043/6 = 22,340 circulation transaction per one staff FTE for last year

5.2.7 ILL's Requested (for Your Users)

This indicator shows that the number of ILL's requests from other libraries. In Bilgi Library's case this number is 410 (books and articles)

5.2.8 ILL Requests Received from Other Libraries

This indicator shows that the number of ILL's requests by other libraries. In Bilgi Library's case this number is 599 (books and articles)

5.2.9 Ratio of Outgoing ILL's to Incoming ILL's

Outgoing ILL' s are the requests received by other libraries. Incoming ILL's are the requests for our users from other libraries.

Outgoing ILL's for year 2004 in Bilgi Library is 599
Incoming ILL's for year 2004 in Bilgi Library is 410

The ratio is 599/410 = 1.4 It shows that Bilgi library requests 1.4 times less documents than they send to the other universities.

5.2.10 General Patterns of Use

It has long been conjectured, and more recently demonstrated, that the pattern of use of books in a library follows a hyperbolic distribution – a rather small number of items accounts for a large proportion of all the uses and the majority of items are little if ever used (Lancaster, 1993 p.52)

This indicator simply shoes the frequency of use of the titles in the collection. The use of automated systems permits an analysis of circulation patterns based upon extensive data collected over a considerable period of time. (Lancaster, 1993 p.54)

The study of this type was performed on circulation data for 5 years gathered at Bilgi University library through the automation system.

Table 5.5 Number of Circulated Items in the Collection for Five Years

Number of circulation	Number	Percentage
0 times	19,288	28.09%
Between 1-5 times	28,785	41.92%
Between 6-10 times	9182	13.37%
11 and more	11,411	16.62%
Total	68,666	100%

As shown at Table 5.5. 28.09% of the items are not circulated at all. 71.91% of the items is borrowed at least one time. Of course these percentages do not include the in-house use[5]. If a book is not borrowed, it could be used in the library. This numbers do not include non-circulated items (reference books, e-resources, academic journals, etc.)

Table 5.6 Distribution 0 times Circulated Items by Year

Year	**Number**	**Percentage**
2000 and before	7,862	40.76%
2001	2,457	12.74%
2002	3,043	15.78%
2003	966	5.01%
2004	2,687	13.93%
2005	2,273	11.78%
Total	19,288	100%

It can be seen that non-circulated items according to arrival dates to the library at Table 5.6. If 28.09% of the collection were never checked out, it is important to bring up the characteristic of the collection. It seems that more than half of the non-circulated items are composed of the titles arriving in the library in year 2001 and before. It can be seen the subject distribution non-circulated items at Table 5.7. This analysis can be done according to location, language, acquisition type, etc.

[5] *The number of times an item is used within the walls of a library during a given period of time* (ODLIS)

Table 5.7 Subject Distribution of Non-circulated Items

Subjects	Items	Percentage
H - General Social Sciences.	4,057	21%
P - Philology - Linguistics.	4,264	22%
D - General World History and Geography	3,109	16%
R - Medicine/Agriculture/General Technology.	1,788	9%
K - Law (General)	1,728	9%
Q - General Science.	1,378	7%
B – BX Philosophy and Psychology.	753	4%
J – General Legislative and Executive Papers.	753	4%
M – Music	607	3%
AC – Collections, Series, Collected Works, Periodicals	546	3%
N - Visual Arts (General)	305	2%
Total	19,288	100%

Also, it does not show that a book has not been used so far does not necessarily mean that it will never be used. While this is true, it is important to recognize that the longer a book goes without being used the less probable it becomes that it will ever be used. (Lancaster 1993, pp. 56)

5.2.11 In-house use

Circulation data do not give a complete picture of a collection because they fail to take into account the use of materials within the library. (Lancaster 1933, p.76) There are several ways of counting in-house use of materials. (Van House 1990, p.55)

- By asking users do not re-shelve materials used in the library. After that someone will count the materials on the tables.
- By observing users' behavior and counting their uses.
- By asking users how many materials they used during their visit
- By placing questionnaires in selected materials, asking users who find them to complete them.

Different methods give different results and it is not clear which is the most accurate.
It was found fairly high correlations between circulation and in-house use and it was concluded that circulation and in-house use are similar but not identical. By using the techniques above, it can be estimated the annual in-house use counting the materials for an entire term. Annual in-hose use can be found by dividing in-house materials use by

circulation during that same term, then multiplying that percentage by the annual circulation (Van House 1990, p.58)

> For example, if in-house use for one semester is 70,000, circulation for the same semester is 50,000 and annual circulation is 120,000:
>
> 70,000/50,000 = 1.4
> 1.4 x 120,000 = 168,000 annual in-house uses (Van House 1990, pp.58)

Calculation of in-house use is much easier thanks to the library automation systems Once it is guaranteed that the books aren't shelved by the readers, library staff can process the books used inside the library as if they were borrowed/returned. When these books are processed under an anonymous account, the library automation system can calculate the amount of books that are used within the library.

5.3 INFORMATION SERVICES

5.3.1 Online Searches per Year

Online search means that the search and retrieval of information from remote online databases in support of specific information needs. (Abbott 1994, pp.5)

The total search of eight considerable databases in Bilgi library was 113.898 during year 2004. This number indicates the number of downloaded full-text articles by users.

5.3.2 Number of Searches per Library User

This indicator shows that the searches made per a library user approximately. If we say 113,898 searches made by bilgi library users, 8,762 is the total registered user number. 113,898/8,762=12.9 searches (in this case it is full text article) per library user per year.

5.3.3 Remote Uses per Capita

This indicator relates the number of remote uses by members of the primary user group during a year to the primary user group. Regarding to this indicator, remote use is defined as use of library's electronic services (OPAC, electronic databases, electronic journals,

electronic reference resources, etc) from access points outside the library. (Saur 1996, pp.104)

In order to calculate the remote usage the number of remote uses by members of the institution per year is divided by the number of members of the institution (Saur 1996, pp.104)

At Bilgi Library, the “Web Access Management” module of the automation system allows to find out the remote access of the library. According to Library Annual Report the total access according to years is shown below:

Years	2002	2003	2004
Total resources	62,029	146,118	481,061

According to Library Annual Report the total faculty members registered to the library is shown below:

Years	2002	2003	2004
Faculty member	5,697	6,473	7,881

During year 2002 62,029/5,697 = 10.88 times
During year 2003 146,118/6,473= 22.57 times
During year 2004 481,061/7,881 = 66.04 times

The above calculation shows that how many times one faculty member used the library off campus.

6 QUESTIONNAIRE RESULTS

The questionnaire has been prepared to determine the following issues about Istanbul Bilgi University Library:

Frequency of visits to the library
General library utilization patterns
Use of library resources
Users' satisfaction from the library staff.

Frequency and reasons for the use of databases.

Borrowing and returns are excluded on purpose because we are able to measure it through the library automation system.

72.73% of the participants are undergraduate students, 14.4% is academicians, 10.10% is master students and 3% is administrative staff. I made my sampling according to user profile of Bilgi University library. As you can see in table 13 undergraduate students, graduate students and academicians constitute the most significant part of Bilgi University library users. The questionnaire is evaluated using mini tab program and questionnaire can be seen in the in appendix.

Table 5.8 Profile of Participants to the Survey

User type	Numbers	Percentage
Undergraduate students	72	72.73%
Academic staff	14	14.14%
Master students	10	10.10%
Administrative staff	3	3%
Total	99	100%

Q1 Question one asks the frequency of library visitations to the library.

Table 5.9 Frequency of Bilgi University Library Visitations

Periods	Numbers	Percentage
Everyday	45	44.12%
Few times a week	30	29.41%
Once a month	17	16.67%
Once a week	8	8%
Others	2	2%
Total	102	100%

Q2 Question two asks the periods of the library visitations. According to the questionnaire result more than a half of the participants visit the library in the periods between midterm exams and finals exams and only midterm's exams. It can be seen in detailed at Table 5.10

Table 5.10 The Periods of Bilgi University Library Visitations

Periods	Numbers	Percentage
Between midterm exams and final exams	44	36.07%
Midterm exams period	26	21.31%
Beginning of the semester	25	20.49%
Final exams period	19	16%
Resit exams period	4	3%
Others	4	3%
Total	122	100%

Q3 According to the questionnaire result of question three, %50 of the participants stays in the library between 1-3 hours. 38.8% of the participants stay in the library less than 1 hour and 11.2% of them stay more than 3 hours.

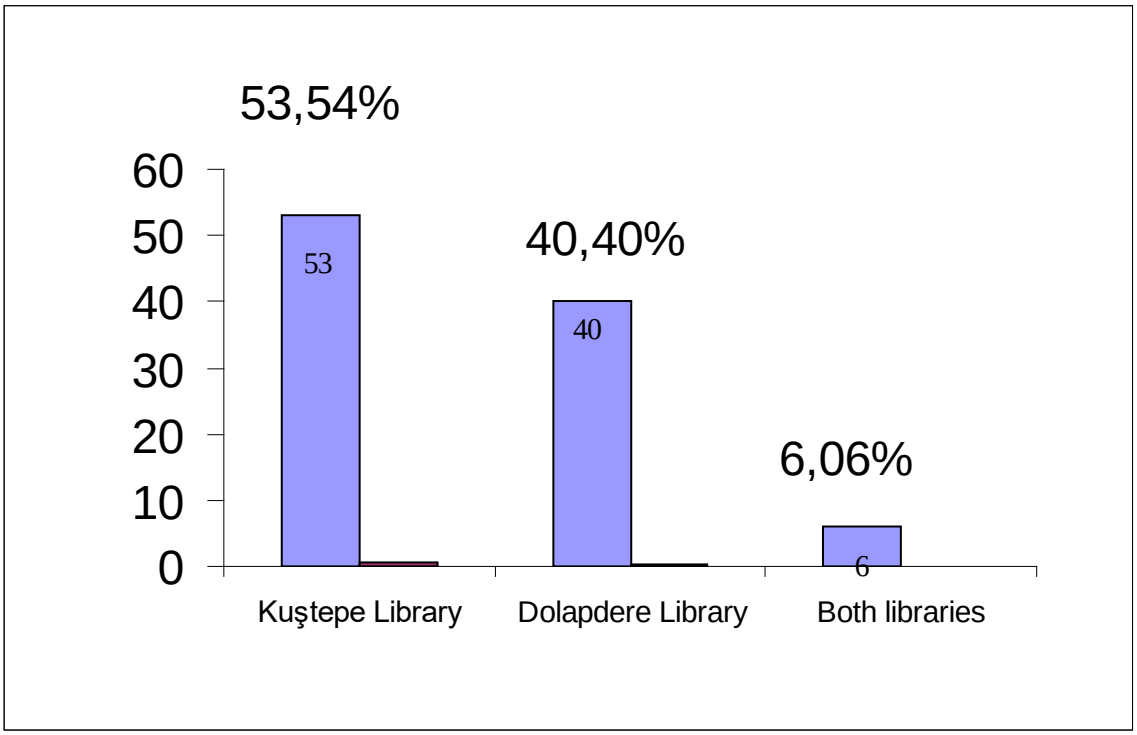
Also it can be seen the ratio of period of staying in the library per user type at Table 5.11.

Table 5.11 The ratio of Period of Staying in the Library per User Type

TIME/USER TYPE	Undergraduates (Percentage)	Undergraduates (Percentage)	Academic staff (Percentage)	Other University Members (Percentage)
Less than 1 hour	36.84	18.42	36.84	7.89
Between 1-3 hours	95.92	4.08	--	--
More than 3 hours	90.91	9.09	--	--
All	72.45	10.2	14.29	3.06

Q4 53.54% of the participants prefer to use Kuştepe Library as shown at Table 5.12. 40.40% Dolapdere library and 6.06% of them prefer to use both libraries

Table 5.12 The Most Preferred Libraries by Bilgi University Library Users



Q6 – 1 98 of the participants has answered this question. The mean of "studying and researching through the books" is 3.7 out of 5

Q6 – 2 99 of the participants has answered this question. The mean of "studying and researching through the bound journals" is 2.3 out of 5

Q6 – 3 99 of the participants has answered this question. The mean of "taking a look at the books and magazines" is 3.2 out of 5

Q6 – 4 97 of the participants has answered this question. The mean of "watching television, DVD, VHS, etc. " is 2.02 out of 5

Q6 – 5 97 of the participants has answered this question. The mean of "reading newspapers and popular magazines" is 3.4 out of 5

Q6 – 6 98 of the participants has answered this question. The mean of "using electronic books, e-journals and e-databases" is 2.9 out of 5

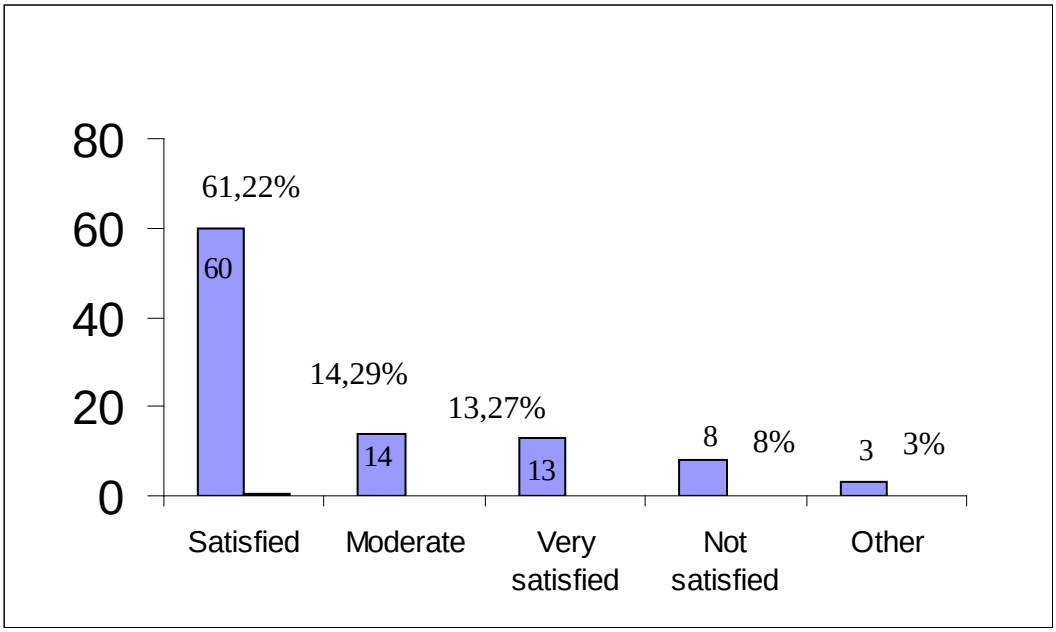
Q6 – 7 98 of the participants has answered this question. The mean of "academic searching through internet" is 3.05 out of 5

Q6 – 8 97 of the participants has answered this question. The mean of "Photocopying" is 2.1 out of 5

Q7 The satisfaction rates of the library materials is shown at Table 5.13

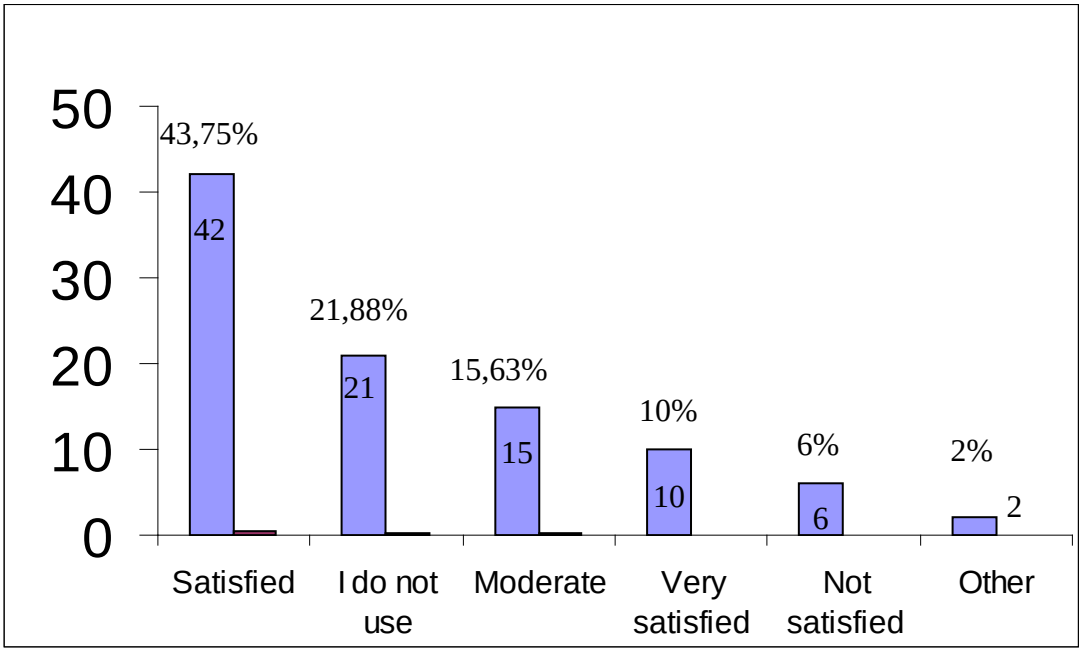
Q7 -1 Book

Table 5.13 Satisfaction of the Library Materials (Book)



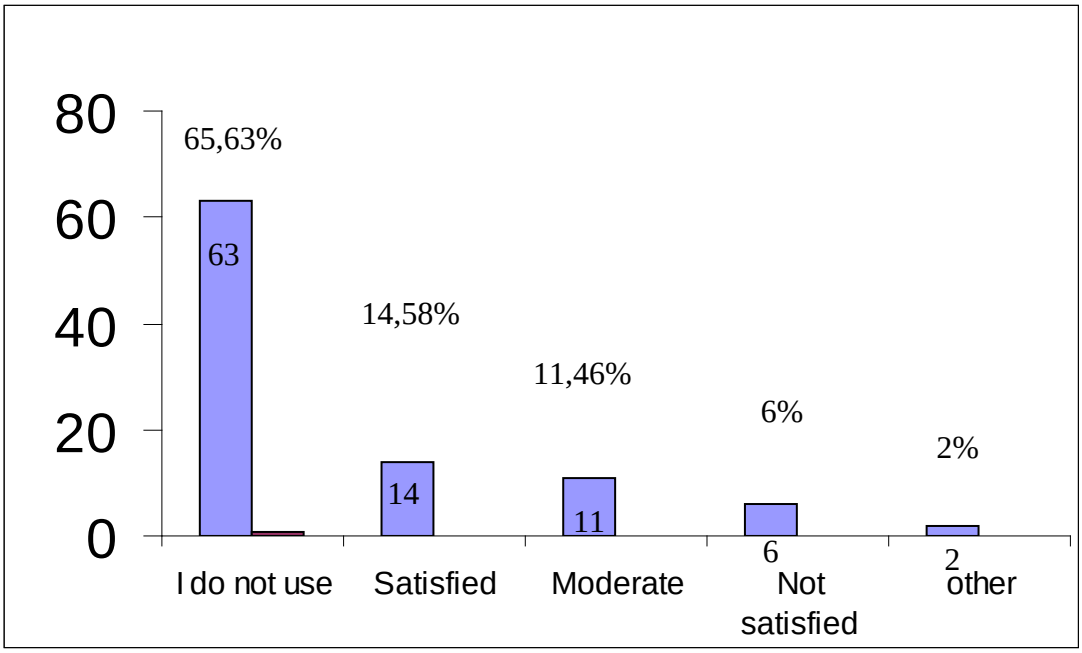
Q7-2

Table 5.14 Satisfaction of the Library Materials (DVD)



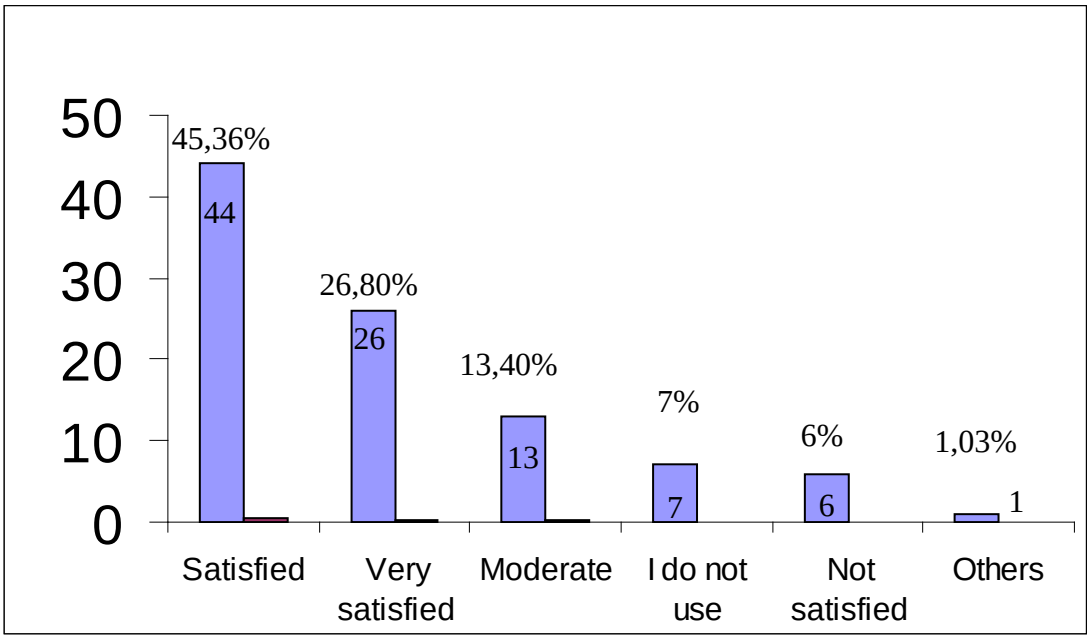
Q7-3 Music CD

Table 5.15 Satisfaction of the Library Materials (Music CD)



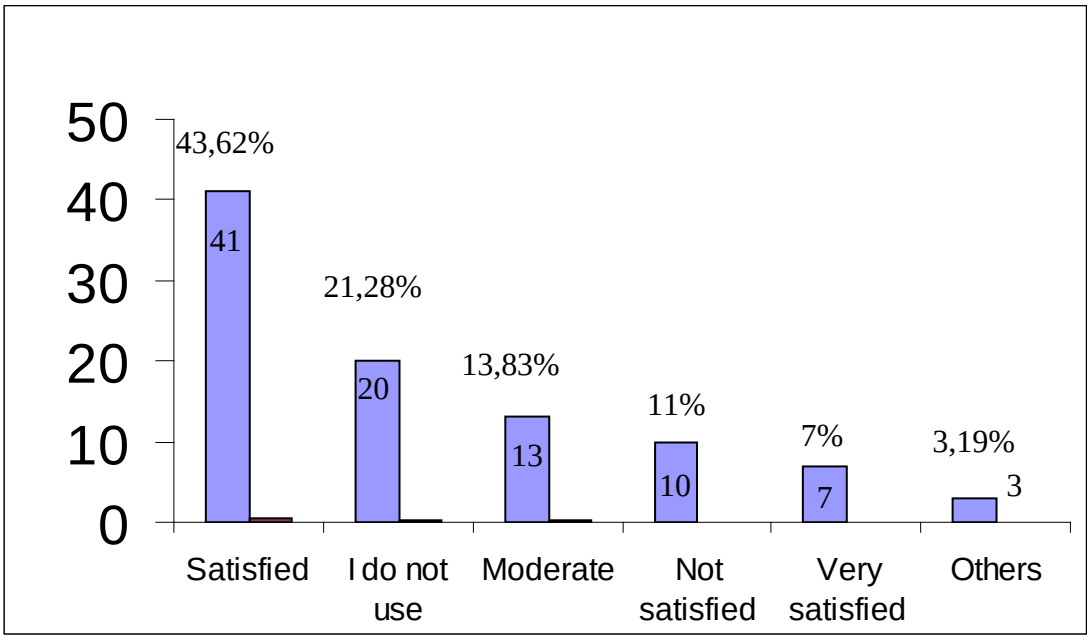
Q7-4

Table 5.16 Satisfaction of the Library Materials (Popular Magazines/Newspaper)



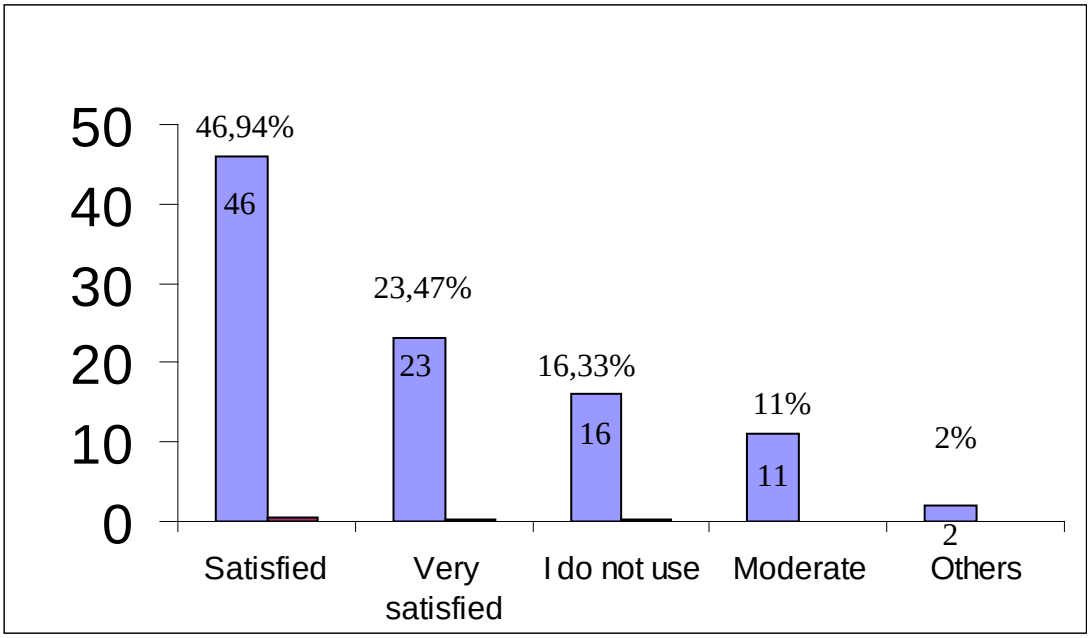
Q7 -5 Academic print journals

Table 5.17 Satisfaction of the Library Materials (Academic Print Journals)



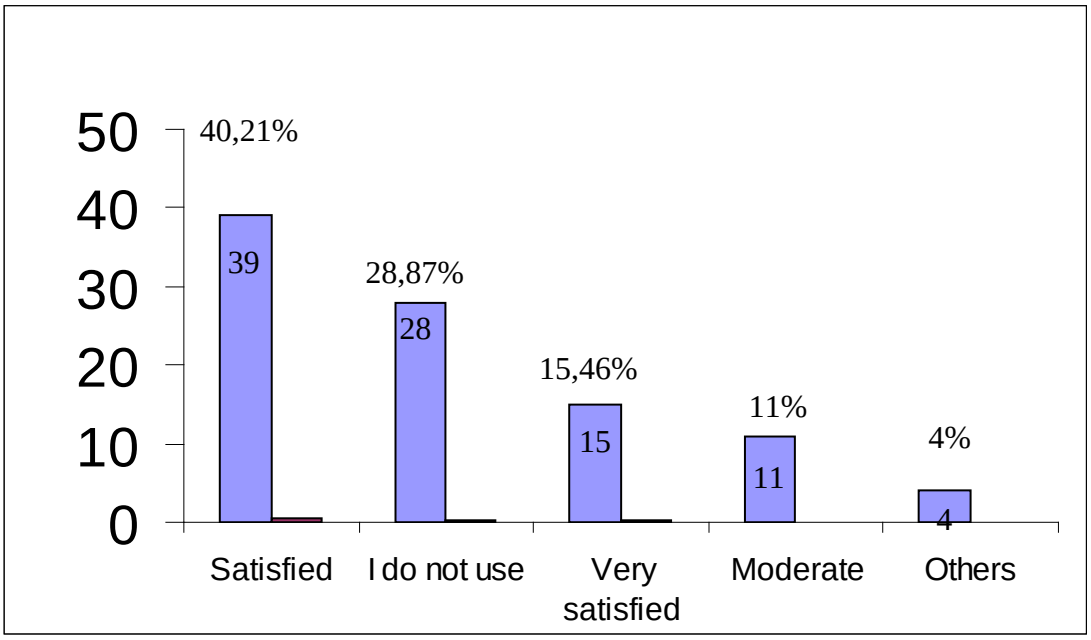
Q7-6

Table 5.18 Satisfaction of the Library Materials (Electronic databases)



Q7-7 E-books

Table 5.19 Satisfaction of the Library Materials (e-books)



Q8 I tried to find out if the users have difficulties in finding materials on the shelves. Most of the time, library users mis-shelve after they used them. Because of that sometimes it becomes impossible to find the book on the shelf. According to the result of this question; the mean of the users who have difficulties in finding books on the shelves is 2,1. They seem that they are able to find the materials on the shelves.

5 is always and 1 is never. According to Table 5.20 users having difficulties in finding are mostly undergraduates.

Table 5.20 The rate of users having difficulties in finding materials on the shelves per user type Margins and format

RATE/USER TYPE	Undergraduates (Percentage)	Graduates/master (Percentage)	Academic staff (Percentage)	Other University Members (Percentage)
1	65.12	16.28	13.95	4.65
2	81.82	--	18.18	--
3	66.67	13.33	20	--
4	84.62	7.69	7.69	--
5	100	--	--	--
All	73.20	10.31	14.43	2.06

Q9 This question measures satisfaction of the users with the attitude of library staff when they are unable to find the materials on the shelves.

96 of the participants have answered this question. The mean is 4.5 out of 5. They seem that that are satisfied with the attitude of the staff.

Q10 This question measures the acquisitions speed of the library. Acquisitions speed means the speed of arrival of the books to the library.

This question addresses to the academic staff mostly since the only academicians have right to order materials for the library. Others can only make suggestions on ordering any kind of material.

72 of the participants have answered this question. The mean is 3.3 out of 5.

Q11 This question asks the processing speed of the books after arriving in the library. Technical process means that the cataloging of the books, labeling call numbers, stamping, etc.

82 of the participants have answered this question. The mean is 3.7 out of 5.

From Question 12 to question 17, I tried to measure the frequency and reasons of electronic books, e-journals and e-databases.

Q12 The questionnaire results show that the big part of the participants use the electronic resources in the library. If they prefer to use them outside the library, home and office are mostly preferred.

Table 5.21 Where to Access Electronic Books, e-journals and e-databases

From where	Numbers	Percentage
In the library	47	46.08%
Out of the library	23	22.55%
Home	17	16.67%
Office	7	7%
I do not use	4	4%
Other	4	4%
Total	102	100%

Q13 According to questionnaire results for Q13, we can say that more than a half of the participants use the electronic resources at least once a month.

Table 5.22 Frequency of Using Electronic Books, e-journals and e-databases

Frequency	Numbers	Percentage
Few times a week	20	20.83%
Once a week	17	17.71%
Once a month	16	16.67%
Once or more than once in a semester	16	17%
Once or more than once a month	15	16%
Less than a semester	4	4%
Everyday	3	3.13%
Others	5	5%
Total	96	100%

Q14 The highest percentage of the participants use the electronic resources for course work.

Table 5.23 Purpose of Using the Articles in Electronic Books, e-journals and e-databases

Purpose	Numbers	Percentage
Course work	75	66.6%
Teaching	22	19.64%
Current awareness	14	12.50%
Others	1	1%
Total	112	100%

Q15 The highest percentage of the participants save the resources to their computers.

Table 5.24 Means of Storing and Processing Information from Electronic books, e-journals and e-databases

Means	Numbers	Percentage
Saving on the computer	75	65.79%
Reading from the computer	22	19.30%
Sending via e-mail	14	12.28%
Printing	1	1%
Others	2	2%
Total	114	100%

Q16 The results show that participants who have difficulties in accessing electronic resources is low. We can say that Bilgi Library has partly solved the technical problems in accessing e-resources.

Table 5.25 Difficulties in Accessing Electronic Books, e-journals and e-databases

Rate	Numbers	Percentage
Sometimes	36	39.56%
Rarely	25	27.47%
Never	16	17.58%
Always	9	10%
Often	5	5%
Total	91	100%

Q17 The results show that the participants are generally satisfied with electronic resources.

Table 5.26 Overall Satisfactions from Electronic Books, e-journals and e-databases

Success	Numbers	Percentage
Satisfied	54	57.45%
Moderate	27	28.72%
Very satisfied	7	7.45%
Not satisfied	5	5%
Others	1	1%
Total	94	100%

CONCLUSION

This project was carried out to provide a practical introduction to productivity management and performance measurement in library and information services, especially in academic libraries.

Determination of performance indicators used in performance measurement was the most important part of the project. All performance indicators are carefully defined while the criteria and their importance are also explained. There is no closed list of performance indicators. Academic libraries in all over the world show great varieties in organizational, financial, and technical conditions. Therefore, every library is free to create its own performance indicators according to its requirements.

Measuring is much easier thanks to the library automation systems. Libraries used to calculate the necessary data manually before the automated systems. Today most of the data used in measuring process generated by the library automation system. However, it must be noted that, although the systems can generate some of the data (for example, the date of ordering and receiving documents) the systems cannot calculate the necessary indicator.

According to the above stated project it can be concluded that evaluation procedures can help the manager of a library to improve the quality of the services offered and also to allocate available resources more efficiently. Moreover, as long as the evaluation procedures are simple and do not place too much of a burden on the users of the services, they can be good for public relations since they indicate that the information center is genuinely interested in improving its services. Finally libraries serve for people and the systems of performance measurement are valuable if only they help the library manager to raise the quality of services for users.

The study that I have conducted in Bilgi Library is a mere attempt of sampling performance indicators and demonstrating their use in practice. Actual performance measurement in academic libraries is a lengthy and burdensome process, which requires the entire staff to work in harmony and coordination. Besides, such studies should be repeated with specific intervals. Finally, and most importantly, comparing the values

obtained for these indicators with those observed in other libraries will prove to be quite meaningful in the sense that such benchmarking will provide for standardization and a better understanding of the results.

REFERENCES

Abbott, Christine (1994). *Performance Measurement in Library and Information Services.* London: Aslib, The Association for Information Management

Alemna, A.A. (1999) Library Evaluation: Some Options for Academic Libraries . *Aslib Proceedings*. Bradford: Jul/Aug 1999 col.21 issue 7; p.243

Awuku, Ohene Sakyi (1995). Productivity in University Libraries of Developing Countries: West and Southern African Perspective, *Library Management* Volume 16 Number 3

Boekhorst, Peter (1995) Measuring Quality: the IFLA Guidelines for Performance Measurement in Academic Libraries." *IFLA Journal*, v. 21, no. 4

Breeding, Marshall (1999) New Look at Large-Scale Library Automation Systems, *Computers in Libraries,* v. 19 Issue 8

Drucker, Peter F. (1991) The New Productivity Challenge, *Harvard Business Review*; Vol. 69 Issue 6

Heizer, Jay H. (2004) *Operations Management.* Upper Saddle River, N.J. : Prentice Hall

Henty, Margaret (1989) Performance Indicators in Higher Education Libraries, *British Journal of Academic Librarianship* v. 4, no. 179

Lancester, F.W. (1993). *If You Want to Evaluate Your Library...* Champaign : University of Illinois, Graduate School of Library and Information Science.

Morgan, S. (1995). *Performance Assessment in Academic Libraries.* London; New York: Mansell Pub.

ODLIS —Online Dictionary for Library and Information Science by Joan M. Reitz. available online at http://lu.com/odlis/odlis_l.cfm

Oppenheim, A.N. (1992) Questionnaire Design, Interviewing and Attitude Measurement. London: Pinter

Saur, K.G. (1996) *Measuring Quality: International Guidelines for Performance Measurement for Academic Libraries*, München: International Federation of Library Associations and Institutions

Sahay, B.S. (2005) Multi-factor Productivity Measurement Model for Service organization, *International Journal of Productivity and Performance Management* vol.54, no.1

Tabs, A.D. (2003) Academic Libraries 2000, *National Center For Education Statistics* November 2003

Van House, Nancy A. (1990). *Measuring Academic Library performance: a Practical Approach.* Chicago : American Library Assoc.

APPENDIX

İSTANBUL BİLGİ UNIVERSITY LIBRARY - QUSTIONNAIRE

This questionnaire has been prepared to determine the following issues about Istanbul Bilgi University Library:

Frequency of visits to the library
General library utilization patterns
Use of library resources
User's satisfaction from the library staff.
Frequency and reasons for the use of databases.

Thanks for filling up the questionnaire

1- How often do you visit the library?
( ) Everyday ( ) Once a week ( ) few times a week ( )once a month ( ) once or more than once a month ( ) other ( ) once in a semester ( ) once or more than once in a semester ( ) less than a semester ( ) I do not visit the library

2- During which period of the semester do you come to the library at most?
( ) Beginning of the semester ( ) midterm exams period ( )Final exams period ( ) Between midterm exams and final exams period ( ) Resit exams period ( ) I do not visit the library

3- How long do you stay in your library visit approximately?
( ) less than 1 hour ( ) between 1-3 hours ( ) more than 3 hours

4- Which library do you prefer to use?
( )Kuştepe Library ( )Dolapdere Library ( ) both ( ) none

5- How do you study in the library?
( ) Alone. ( )with my friends. ( ) both ( ) none

6-How often do you do the following activities in the library?

Studying and researching through the books.
Always Never
5 4 3 2 1

Studying and researching through bound journals
Always Never
5 4 3 2 1

Taking a look at the books or magazines..
Always Never
5 4 3 2 1

Watching Television, DVD, VHS, etc...
Always Never
5 4 3 2 1

Reading newspapers and popular magazines
Always Never

5 4 3 2 1

Using electronic books, e-journals and e-databases.
Always Never
5 4 3 2 1

Academic search through internet.
Always Never
5 4 3 2 1

Photocopying.
Always Never
5 4 3 2 1

Other – Please explain.....

7- How satisfied are you with the following library materials?

Book ( ) Very satisfied ( )satisfied ( )moderate ( )not satisfied ( )not at all ( ) I don't use

DVD/VHS ( ) Very satisfied ( )satisfied ( )moderate ( )not satisfied ( )not at all ( ) I don't use

Music CD ( ) Very satisfied ( )satisfied ( )moderate ( )not satisfied ( )not at all ( ) I don't use

Popular magazine /newspaper ( ) Very satisfied ( )satisfied ( )moderate ( )not satisfied ( )not at all ( ) I don't use

Academic print journals ( ) Very satisfied ( )satisfied ( )moderate ( )not satisfied ( )not at all ( ) I don't use

Electronic databases ( ) Very satisfied ( )satisfied ( )moderate ( )not satisfied ( )not at all ( ) I don't use

E-books ( ) Very satisfied ( )satisfied ( )moderate ( )not satisfied ( )not at all ( ) I don't use

8- How often do you have difficulties in finding the materials on the shelves?
Always Never
5 4 3 2 1

9 –How satisfied are you with the attitude of the staff if you are unable to find the materials on the shelves?
Very satisfied not at all
5 4 3 2 1

10- How satisfied are you with the acquisitions speed?
Very satisfied not at all
5 4 3 2 1

11- How satisfied are you with the processing speed after the materials arrived in the library?
Very satisfied not at all
5 4 3 2 1

12- Where do you access to electronic books, e-journals and e-databases from?
( ) in the library ( ) out of the library (i.e., dorm, office, home etc.).please explain?.....

13- How often do you use electronic journals and databases ?
( ) Everyday ( ) Once a week ( ) few times a week ( )once a month ( ) once or more than once a month ( ) other ( ) once in a semester ( ) once or more than once in a semester ( ) less than a semester ( ) I do not visit the library

14 What is your main purpose of using electronic books, e-journals and e-databases ?
( ) Teaching ( ) Course work ( ) Current awareness ( ) other .....

15- How do you use electronic journals and databases?
( ) Reading from the computer ( ) sending e-mail ( ) saving to the computer ( ) other. Please explain?

16- Do you have problems in accessing the electronic books, e-journals and e-databases off campus?
( ) Always ( ) often ( ) sometimes ( ) rarely ( ) never

17- Overall, how satisfied are you finding the information from electronic books, e-journals and e-databases?
( ) Very satisfied ( ) satisfied ( ) moderate ( ) not satisfied ( ) not at all

18- General information:

Student /Undergraduate ( )
Department.....

Student /Graduates ( )
Department.....
Student/PhD ( )
Department.....

Academic Staff ( )
Department.....

Other University Member ( )
Department.....

Administrative staff ( )
Department.....

Your campus:.....